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Hints on Grape Culture.—XIX.

IN our last we left the vines pruned at the end of the second year, and placed in their winter quarters, from which we now propose to bring them forth; that is to say, as soon as the frost is out of the ground.

We have stated that something more than pruning or shortening in the arm is necessary in order to develop the buds equally, and we now propose to explain the simple process by which this is done. Under ordinary circumstances, the buds will break strongest near the ends of the arms, and weakest near the trunk; and the tendency of these weak shoots will be to grow weaker year by year, until at last little or no fruit at all will be produced. No after treatment will give them size and vigor. If, however, the buds near the trunk are induced to break strong when the arm is originally formed, a suitable channel for the sap will be formed, through which it will continue to circulate under ordinary good treatment. Too much importance can not be attached to this particular part of the subject; it would be difficult to calculate the number of pounds of grapes annually lost by neglecting to establish the proper points for the full and vigorous development of fruit wood. Now let us see how this is to be done. The gradual formation of the arms will do much to accomplish this purpose, and it is for this reason that we discourage leaving them of their full length. Something in addition to this, however, is useful, and even necessary. By bending the arm the sap vessels at certain points will be compressed, and the flow of the sap in a measure controlled. What is to be done, therefore, is to bend the end of the arm towards the ground, and secure it there. This may be done by a string or wire and a peg, or in any better way that the reader's ingenuity may suggest; a long hooked peg will answer the purpose very well. Before bending the arm the trunk of the vine must be

firmly tied in its place, but the tieing must be so done as to avoid having the string act as a ligature. The degree of curvature to be given should be sufficient to move the arm considerably out of a straight line; it should, withal, be a graceful curve, to disarm criticism; it matters not whether it be in the nature of a parabola or a compound circle. This, however, only *en passant*, for readers who are very nice in matters of taste. The degree of curvature may be judged of very well by an examination of the engravings which will accompany our next article, and which should have been given with this. The curving of the arms not only compresses the sap vessels, as already stated, but it places the buds near the trunk at the highest point of the flow of the sap; and this, the reader will understand from what has been stated heretofore, greatly encourages the growth of the buds at this point; for they are placed, for the time being, somewhat in the condition of the buds near the end of the arm.

The arms having been bent, they are to remain so till the new shoots have grown about three inches, when they are to be placed horizontally, and tied securely to the bottom wire. If the vines have been grown as directed, the buds will be on opposite sides of the arm; this, in fact, is their natural position, but it is frequently altered by careless tieing. The arms must be so tied that one row of buds shall be on the upper side, and the other on the lower. In short-jointed varieties of the grape, such as the Delaware, Rebecca, etc., all the lower buds must be rubbed out; otherwise the shoots will be too much crowded. In long-jointed kinds, such as the Union Village, Concord, etc., both the upper and lower buds may be allowed to grow. In this case, the arm may be tied on the upper side of the wire, and the arm slightly twisted so as to bring the buds on the sides. The shoots will naturally grow upright, but in some cases they may need a little assistance. The young shoots must be handled with the greatest care, as they are exceedingly brittle; and a gap once made in the arm is not easily filled. After the arms are fully established, so much care will not be necessary.

The arms are usually bent in the direction in which they grow; but we have found the best results to proceed from an opposite course; that is to say, bending them in reverse order. We fear, however, that the reader will not understand this without the assistance of illustrations, and therefore leave it till our next.

THE CIRCULAR CURVE.

BY GEO. E. WOODWARD,

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It would appear, on carefully reading the article in the August number, page 367, by Mr. James Hogg, that he condemns the use of the circular curve in laying out ornamental roads, for the reason that he has no knowledge of any

heavenly body having a circular orbit. Thus he says: "None of the orbits of the heavenly bodies, or any of their lines of motion, are in the nature of circular curves." And again he says: "I call attention to the fact that the circular curve does not exist in nature, or among the celestial bodies." It would have been proper to establish these assertions by proof, as they are made in reply to well-known principles, and which we are in the act of demonstrating. When one advances a new theory, facts should not be ignored, nor false assertions made. "He succeeds best who brightly illuminates his work by the lamps of Truth, Power, and Beauty; if the *first* is at all dimmed, the others will be more than correspondingly darkened."

It is necessary for us, in reply, to prove beyond all question that the circular curve does exist as a line of motion among the celestial bodies; this done, and his whole superstructure, statues, ships, water-cart horses, etc., is completely demolished. If heavenly bodies have circular orbits, then, according to Mr. Hogg, the circular curve is a curve of motion, and, consequently, must be flowing, graceful, beautiful; precisely what we claim for it.

We think Mr. Hogg misunderstands us. While we speak of *compound* circular curves, he refers to semi-circular arcs, judging from his allusions to ships and statues.

He misrepresents us by quoting us as saying, on page 299, July number: "It (the circular curve) can be made to pass through any point," etc. We said, "It (the circular curve, *compounded of different radii*) can be made to pass through any point," etc. Black and white do not differ more than the misquotation and the true one.

How Mr. Hogg can assert that the circle is not a "curve of motion" we can not understand, when it is one of the four curves in which a satellite of the sun can move. Newton proves in the "Principia" (Book I., Prop. 11, 12, and 13) that the path of a planet affected by the power of gravity will be one of the conic sections; and in the 2d Corollary to Prop. 13, he expressly includes the circle among the conic sections.

The orbits of two at least of the heavenly bodies are not only "in the nature of circular curves," but are actually circular, as far as has been ascertained by the delicate astronomical instruments now used. These are the satellites of Jupiter, Nos. 1 and 2. The orbit of the planet Neptune is very nearly circular, the eccentricity being less than one per cent. of the semi-axis major. The orbits of Mercury, Venus, the Earth, and Saturn are gradually approaching circles.

"The axis of the Earth," says Herschell, "it is true, remains unaltered, but its eccentricity is, and has been since the earliest ages, diminishing, and the diminution will continue till the eccentricity is annihilated altogether, and the Earth's orbit becomes a *perfect circle*."—Herschell, p. 413.

It is needless to multiply proofs on this point; those who desire to follow this

subject farther are advised to consult any of the popular elementary works on astronomy.

"True lines or curves of beauty," says Mr. Hogg, "are those composed of the various curves of motion," and we agree with him exactly.

We assume the position that curves of motion can be *practically* laid out for ornamental roads by using the elements of the circular curve, *which is also a curve of motion*, and that, when a circular curve is properly compounded of different radii, no eye, however accurate, can distinguish between it and the curve it is intended to represent. To execute the field work necessary to lay out a mathematical elliptic or parabolic curve, independent of their foci, involves more labor and calculation than any but a first class fool would care to pay for. The elements of the circular curve are the most simple; and that curve and all its combinations can be more readily and rapidly laid out than any other, not excepting the guess-work curves of the gardener.

Our object is to so simplify the field operations in landscape embellishment, that curves of acknowledged beauty may be traced in the easiest and quickest manner, and that shall not involve the use of expensive instruments, nor the necessity of abstruse mathematical calculations.

We have stated that compound circular curves are *practically* identical with any curve of the slightest use in landscape embellishment. We will go still farther, and assert that the compound circular curve can be made to coincide so exactly with any other curve, that if both be laid out on a large sheet of drawing paper, and one be superimposed on the other, no difference could be detected except by a powerful microscope. We do not say, but, on the contrary, distinctly deny, that the circular curve, or its combinations, is mathematically identical with any other curve; and we also deny most emphatically that any person can walk or drive over an ornamental road, and show which portion of said road is laid out with elliptic, parabolic, or other mathematical curves, and which with compound circular curves.

The combination of curves is a matter of taste; like words or sounds, or colors, the manner in which they are put together will indicate the talent that controls them. It is possible, as we have said in previous articles, to make a combination that will be destitute of grace and beauty, and positively disagreeable to an artistic eye; and it matters not whether the curves used be circular curves or otherwise.

We said the circular curve was adapted to the safe passage of heavy and rapid moving bodies. In the report of experiments made on the New York and Erie Railway in 1855, a train of 100 loaded freight cars, weighing, with engine, etc., 3,530,000 pounds, or about 1765 tons, was run forty-three consecutive miles on the Susquehanna Division at an average of twenty miles an hour, including four stops, from one third to one half of which was over circular curves. The time

made through the reverse curve at Cameron was ten miles an hour.* Is it not splitting very fine hairs to say that an ornamental road laid out on a circular arc is not adapted to the passage of rapidly driven vehicles?

The remarks on the sphere we do not precisely understand. Admitting there is no example of a perfect sphere in nature, we could not quote a section of a sphere as a perfect circle; but as the form of the earth is an oblate spheroid, that is, a solid generated by the revolution of a semi-ellipse around its major axis, every section of an oblate spheroid at right angles to the axis must be a perfect circle; we therefore give this as an example.

The tendency of a body traversing a curved line is to fly into a straight line or tangent, when all centripetal and other attractive force is removed. We, therefore, consider it better to pass from a curve to a straight line, and from that straight line on to the reverse curve, or else make the degree of curvature on both curves as slight as possible at the point of reversing; the line is more beautiful and the motion easier. Contrary curvatures are the most beautiful when their radii are equal, and the most graceful bends, says Mr. Hay, are those in which two ellipses touch at points having the greatest equality of curvature.

We thoroughly understand the practical values and beauties of the elliptic and parabolic curves, and constantly make use of them in our practice; but whether they are more beautiful than the circular curve is merely a matter of taste. Mr. Alison, in his Essays on Taste, thinks the circle the most beautiful; Mr. Ruskin thinks it the least beautiful of all curves. We think the right curve in the right place has the most beauty.

Unless the eye be exactly in the axis where the circle can be seen as a circle, which is almost an impossible case, as far as an ornamental road is concerned, "perspective," says Mr. Garbett, "makes it appear elliptical or hyperbolic." It would thus seem that if the circular curve is objectionable, its appearance must be, except from one point, the perfection of grace and beauty.

That vehicles should delineate natural, and therefore beautiful lines, depends altogether upon the horse and his driver. The best drivers find it sometimes impossible to make a young horse follow any regular line, and the natural instinct of a well-broken horse, on entering his master's grounds, is to take a straight line to the stable. We therefore find, in most country places, the turf edged by wheels, where horses turn too sharp to get the straight direction.

The principal drives of the Central Park are grand in their conception and execution. Their width is such that numerous beautiful curves might be traced by vehicles, and not be parallel with the border. We know that every curve described by all the heavenly bodies can be laid out through their entire length, and yet be confined to the gravel.

* The experiment was not made for the purpose of testing safe speed, but to ascertain the comparative cost of moving freight.—*N. Y. and E. R. R. Report*, 1855.

As to the water-cart horses, we would suggest that their instincts be discouraged and their tastes educated. We should like to buy, and will pay a high price for a horse, or any other animal, that can delineate an elliptic or parabolic curve.

In this intelligent age, it is folly to write down the results of civil engineering, a profession whose limits have not as yet been defined, nor can they by any possibility be kept outside the field of art. As long as civil engineering covers the arts of construction, it must include the arts of design. Proportion, harmony, light and shadow, and other artistic appliances, must be thoroughly understood by every engineer who seeks a prominent position in his profession. Our practice of it carries us into the highest walks of art, and we presume to say, after thirteen years' practical experience, that a first-class civil engineer must necessarily be an accomplished architect; he must understand every principle of construction, and the value and strength of every class of building material; and unless he be content to copy others, he must be familiar with the principles of design; but the fling at the engineering profession falls short in its aim at us. Our education as an artist is thorough and complete, and equally so as an architect and a civil engineer. We have served our time in every grade of the three professions, and have found them indispensably necessary in the pursuit of the profession of Landscape Adornment. We attribute our uniform and gratifying success to the ground work so well and thoroughly laid.

THE LIBRARY.—I.

BY S. L. B., BROOKDALE FARM, ME.

In the plans of country residences which appear from time to time in the Horticulturist and other rural journals, there is often a room marked as the *Library*, which presupposes the owner to be possessed of a collection of books, and that he desires a place for them. But, aside from the fact that this apartment has its assigned corner in the general plan, little is said of it, and one would infer that its importance, as compared with the other rooms, or with the surroundings of the dwelling, was of small account. Believing that it deserves more attention than is usually given it, and that its consideration is one of those topics which properly comes within the scope of a work "devoted to Rural Art and Rural Taste," and with the hope that one or two articles upon the subject can be made interesting, the writer proposes to speak of the library of the country residence.

Books are an indispensable accompaniment to every well-ordered house. They are silent friends that instruct us at our leisure, and by the fireside in winter, or under the shade of summer trees, they are the same true companions, wise counselors, and gentle friends. And there is a closer connection between books and the library, and out-of-door life and pursuits, than may at first be supposed. The

well-kept lawn, and the naturally arranged grounds without, speak of the library within; the flower bed gives evidence of the book-shelf; and it is not often that an estimate of the one founded upon the other, fails to give the above mentioned results. The labors of the gardener and the work of the horticulturist are aided and directed by the experiences, practices, and observations of eminent men, who have recorded their knowledge in books; and having them for guides, the novice can soon be master of the art, in a degree at least sufficient to enable him to work with correctness and industry. The physician consults his books, and by this means—by the cases there stated, and the rules laid down—he is prepared to give advice or to apply the knowledge gained to similar cases which come within his practice. The country resident is similarly placed. He consults his books, they direct his labors. If he stumbles or falters, they assist his plans. When the day's labor is over, they are ready, with their stores of accumulated wisdom, to minister to his enjoyment, and furnish him with an amusement at once a source of instruction and a high intellectual pleasure.

This much having been said, as a sort of preface, let us enter the door of the library room. Its size should correspond with the wants of the occupant, and the general arrangement, extent, and character of the whole dwelling. It may occupy a retired part of the house, and that part which commands a less extensive and commanding view of the grounds; for, as its greatest attractions are within, and as the highest source of its pleasures are to be found in its delightful volumes, so less regard to outside views can be had, and its position in the plan of the house placed in accordance with this design. The room may also be occupied, at times, as a family sitting-room, if the extent of the dwelling is not such as to admit of a room for the purpose of a library. The finish of the room should be plain, not elegant. A table or desk for writing, two chairs, a sofa, and cases for books, are the necessary furniture. Leaving a general description of all but the latter, to be decided by the taste and means of the owner, a few words will be said about book-cases.

There are various forms and sizes in which these can be made. If the library is somewhat extensive, a good plan is to have a separate case for each general department. If this plan is followed, such cases should be finished into the walls, the dimensions to be regulated by the number of volumes in each department, but more by the space allowed for them between the windows, doors, etc. They should extend down to within three feet of the floor, and up as far as necessary to correspond with the proportions of the room. If the size and position of the room do not allow cases of this description, there can be a larger case occupying that part of the room remote from windows or doors, and being of sufficient size to accommodate the entire collection. If made in this form, there can be drawers or small closets occupying the lower part of the case, and they will be very useful for storing pamphlets, unbound papers, and other matter which is worthy of preservation. We

doubt the necessity of having doors to the cases, although, as a general thing, book-cases have doors with glass corresponding to the width of the shelves. They look well, but are, nevertheless, inconvenient, and should be abandoned; besides, books look much more inviting when not shut up in a close case. Dust *will* accumulate, and glazed doors are not an absolute preventive; the work of dusting and arranging is also far more easily accomplished without, than with them. If ornament is not desired, a good plain case is made by having each shelf independent of itself in the form of a box, with handles at each end for removing them, and placing them upon each other. An advantage of this plan is, that in case of fire, each shelf can, with its contents, be immediately removed, and thereby saved, when in other cases they would be consumed. Doubtless, a book case constructed in this way can be made ornamental, although it does not generally admit of so much finish as other forms.

The wood of the White Cedar, (*Thuja occidentalis,*) although it is difficult to be obtained of any great size, is the best material for the construction of book cases, as the peculiar odor is offensive to moths, which often seriously infest large collections of books. Next to this, Black Walnut, and Bass or Linden, are the most desirable.

[A most important and interesting subject, too much and too long neglected. B. treats the subject in a manner calculated to invite attention, which we hope it will receive. A good library is an inestimable treasure. We hope B. will continue *in extenso* a subject so well begun.—Ed.]

THE COLD GRAPERY.

BY THE EDITOR.

When we began our Hints on Grape Culture, it was feared by some of our friends that so much prominence given to the vineyard would have the effect of checking the increase of graperies; but we had seen too much to participate in any fears of this kind. The event has fully justified our anticipations; for while the number of vineyards, large and small, is rapidly increasing all over the country, graperies are multiplying without precedent; and this, too, in the midst of a desolating civil war. We have on the board at this moment more plans of graperies than have been called for during any period of our experience. We find, too, that what is true of our individual experience, is also true as a general thing. We take it for granted, therefore, that the proposition we laid down, that the increase of vineyards will beget an increase of graperies, holds good, and will continue to hold good, for some time at least. It must be so in the nature of things. There need, therefore, be no jealousy on this part of the subject. We may state here, that it is no uncommon thing for us to receive applications for a vineyard

and a grapery at one and the same time from the same party. If any of our readers should have conceived the idea that we have any prejudices against graperies, they are laboring under a great delusion. We have repeatedly declared the grapery to be one of the chiefest luxuries of life; one, however, in which the great mass of people can not indulge. For the latter, and for all, indeed, we have the vineyard, within the reach of every man and woman who owns a rod of ground; an enduring source of pleasure, health, and profit. He who can indulge in both is doubly happy.

Our thoughts have been turned in this direction by repeated and persistent applications for information about the grapery; and we have therefore determined to give an occasional article on the construction and care of graperies. Many of these applications refer to the cost of a house, in regard to which there exists a great many crude notions. So much has been said and written about cheap graperies, that not a few have come to the conclusion that they can be built for about the sum that will put up a good wood shed; and their conclusions, we must add, are fully warranted by some articles that have been published on the subject. We know of one very cheap house that has figured largely, and done its share in creating this misapprehension; but the house is not yet half built, and its cost, therefore, is a matter of mere guess work. We venture to say, that when it is done, it will not be worth the money spent on it. Many other so-called cheap houses are open to the same criticism. Some of them are said to have been built for sums that would not, in fact, cover the first cost of the material. Some of these cheap houses are built during periods of leisure, by hands on the place, and no account is taken of the labor; and, under the circumstances, it would not be possible to estimate it truly. There is consequently connected with many of these cheap structures a degree of fallacy which makes them altogether unreliable as criterions of cost; and we hold them unreliable in most other particulars. But the first cost of a house does not necessarily prove it to be cheap; we suppose this will be admitted by most persons who have had experience in building. The expense of keeping such structures in repair in a few years exceeds their original cost. We can see nothing about them to commend them, especially to a poor man; they are mere sheds, and nothing more, and quite unworthy of being dignified with the name of graperies or green-houses. There may be some excuse for erecting them on leased property, but none otherwise. They are objects of the falsest kind of a false economy, and deserve no encouragement whatever. It would be infinitely wiser to add to their first cost, the money spent in their annual repair.

There is another class of cheap houses deserving of more consideration, and in reference to which the word *cheap* has some meaning. These are built mostly of good material, but cheaply put together. Walls are dispensed with, the stuff is unplaned, and whitewash takes the place of paint. They are more lasting than the first named structures, and may be made to take on some degree of tidiness. Though costing more than the first, they are really much cheaper, as the "incident-

al expenses" will show in a very few years. They have this advantage, that they admit of some degree of architectural taste. Located in some inconspicuous spot, they do very well for a man of moderate means; but they should find no place on the grounds of a man of wealth, for they constitute an impeachment both of his wealth and good taste.

There is still another class of graperies, which, in our estimation, are truly cheap. The material is good, well seasoned, and planed; the foundation is of brick or stone; the frame is securely put together, and properly braced; it has architectural taste and beauty, but there is an entire absence of unnecessary ornament. There is nothing about the house that is not really necessary for its strength and durability. A house of this kind may take its place any where, even on the most elaborately finished grounds. Its beauty consists in its proportion and harmony of parts, and it may at any time be elaborated with ornament to any degree that wealth or good taste may suggest; the latter, however, will suggest very little in the way of ornamentation.

There is still another class of houses which are decidedly *not* cheap, either in their first cost or annual repairs. They are very numerous, but need not be particularly noted at present.

In another article we propose to examine the relative cheapness of these different houses, giving the facts and figures. We have put up a good many, and have more under way, and our statements will therefore be more reliable than the sporadic cases occasionally presented to the public. We shall endeavor to present the subject in such a way that the reader may determine for himself which is really the cheapest kind of house. We expect to convince him that cheapness ceases just at the point where durability is ignored.

PEARS IN POTS.

(From the German of Diel.)

We give this month another extract from Diel. His treatment of the Pear is less elaborate than that of the apple, but is by no means devoid of interest. His views in the main are sound and practical, though we do not endorse every thing he says. His remarks are as follows:

Although every pomologist knows that many varieties of the Pear set fruit much easier and earlier than apples, especially Buerré Gris and Beurré Blanc, and nearly all kinds of Bergamotte; as, for instance, the very fruitful and excellent Bergamotte Cadette and many others, the quince tree is so generally accepted as the proper stock for dwarf pear trees, that experience may be said to speak too loud against seedlings. I have myself seen many pear pyramids on seedlings, which bore abundantly, but has every amateur gardens like those at Harbke,

that the size of the garden, with the size of the pyramid, may melt away in proportional harmony?

Von Münchhausen holds then, with much justice, that a careful selection of seedlings from weak-growing varieties, in which Plenne believes to have discovered the secret, is still very precarious, and likely to disappoint. If, therefore, you do not want to have in a private garden of perhaps only half an acre in extent, pear pyramids, that might be taken for fir trees, the quince remains our only refuge, to obtain beautiful dwarf trees of the so highly-prized pear, that will soon bear, and whose size will be proportionable to the common size of private gardens.

From this it is clear that the quince is absolutely necessary for pot trees, for its capacity of root has so much similarity to that of the paradise apple that it may be in the same degree enlarged and checked to maintain the trees for a long time healthy and fruitful.

The quince holds the middle between a shrub and a tree. It grows slow and has no tap root, but only strong bracing roots, which grow slanting down in the ground, and besides a forest of fine feeding roots. Because of the absence of a tap root it can never be used for full standards. Every gale is their grave. But they make half standards, which by their shape, like large orange trees, are as magnificent as they are unsurpassed in fruitfulness.

Its propagation is by suckers, which in nurseries are multiplied a thousand fold by art. To propagate it by cuttings is, as with the paradise apple, hardly worth the trouble.

The sucker of the quince, then, is the true subject for pears in pots. The beauty of the pear tree in the pot surpasses that of the apple tree by far, by the exquisite glossy green of most pear trees; only the latter bears generally more abundantly, but the pear tree blossoms the more richly.

Ordinarily quince suckers have originally many fine feeding roots close under the surface of the ground. These are, as with the paradise stock, cut back, and the main root left only three inches. Often this is originally not even so long. If we plant such a sucker in moist, somewhat shaded ground, where the sun shines only half of the day, it makes, in one single season, a whole forest of roots, and requires no second transplanting to prepare it for the pot.

The most suitable mode of grafting the quince is budding; but because of its great abundance of roots it is still less suited to be potted before grafting than the paradise stock.

The quince tree becomes easily cankerous when wounded. A phenomenon that might almost be set down as a law of nature for all shrubs that propagate themselves by suckers. Therefore, when quince stocks have been budded it is a very necessary precaution, not, as many gardeners are in the habit of doing, when cutting off the stock in spring, before the bud pinches, to leave a few inches of the stock above the bud, but to cut it off slanting, close to the bud. If this is neglected we have not only to wound the tree twice, but the stump left often dies down in the

shape of a triangle below and opposite the bud, so that we must be a long time healing the damage, or have a crippled tree. Nevertheless, this procedure is as common as it is unpardonable. Not a single reason can be found to justify this method, and the first growth of the bud must thereby even necessarily become crooked. Van Wilke denounces this practice with all justice.

Budding the quince for pot trees should be done as near the ground as possible. As general as this rule is in any case, because the quince stock must always come entirely in the ground, it is still more necessary for us, because we can not plant the tree more than three to four inches deep in the pot. Some varieties of the pear, however, do not succeed well on the quince. This is the common testimony of all books of instruction. Some pine away on it, as, for instance, Bon Chrétien d'Auch or Beurré Doré sans Pepins, Bon Chrétien d'Eté, etc. Of some it is said the fruit becomes stony, and some are said not to take at all on the quince; for instance, Rouselette d'Anjou. As a general maxim, it has been set down, that the following three classes of pears are not fit for the quince. First, all those that are naturally apt to be stony. Secondly, all those of which the flesh is not juicy; and thirdly, those with short, crisp flesh, (chair cassante.) The belief is, that when pears with the above qualities are grafted on quince, their natural faults are made worse. On the other hand, it is also generally conceded that all juicy, buttery pears, (beurrés,) and all bergamottes are well suited to the quince.

In all these dogmas, however, as in many other things concerning pomology, there is much that is one-sided, uncertain, and evidently contrary to experience. But from this uncertainty, experiments with trees in pots might relieve us speedily, and with ease and certainty. Here we have the same soil, exposure, and moisture under our control, and without any deceit the truth would soon appear whether the quince stock changed a pear only accidentally or essentially, and what kinds languish on it or do not live at all.

Many pomologists defend the quince, as I do myself, from manifold experience. But to be quite sure of the quality of a pear, and yet to use nothing but quince stocks for my pot trees, I proceed, since a few years, in the following way: I bud small quince stocks with the White Butter Pear, (Beurré Blanc,) which never fails. On the shoot of the Butter Pear I graft, at the proper height for a pot tree, those varieties whose nature is yet unknown to me, and may so be sure to learn their true qualities. This *mediator* is, in fact, the very best means of correcting the too heterogeneous sap of the quince for capricious pears. By this artifice we are therefore enabled to raise all varieties of the pear on quince, and soon to enjoy an abundance of their fruit.

This so-called *double grafting*, little as Hirschfeld, without having tried it, is in its favor, deserves certainly further trials, even if we gain nothing by it, but to have it in our power to raise *all* varieties of the pear, in their natural qualities, on the quince, and so to curb their growth, which even in the feeblest seedling will

be much more impetuous. If Epargne, Bon Chrétien d'Eté, Orange Tulipée, etc., are grafted on Sucre Verd or Beurré Blanc, which are budded on quince, they make the finest and most fruitful dwarf trees.

Of the quince we have two distinct species—not merely varieties—the pear quince and the apple quince. They are distinct by their fruit and foliage. According to my experience, the apple quince is not well suited as a stock for the pear, and it may be that many complaints are founded in the fact that both kinds are indiscriminately used. It is well settled that the pear quince of Portugal is the best for stocks; the pear, however, succeeds also admirably on our common pear quince. The French call the latter the *female*, the apple quince the *male*.*

Pear on apple does not succeed, and still more foolish would it be, possessing the paradise stock, to graft the apple on the quince.

Since last year, (1799,) however, I have by accident been led to make experiments, which, perhaps, merit the full attention of pomologists, and which, I would beg every one to imitate, in order soon to arrive at a certain result, namely: *to graft the pear on the paradise stock.*

I received from a friend several apple scions, and by mistake pear scions with an apple name. The pear scions looked strange to me, and in this uncertainty I grafted two paradise stocks and two pear seedlings with them. As soon as they pushed, I saw that they were certainly pears, but I was astonished to see them take so well on the paradise stock.

The idea that pears, especially the coarse stony kinds, must be much improved on the sweet paradise stock, quickened the desire in me to make more trials with them. This spring I have therefore grafted eight paradise stocks with Colmars, Passatutti, Volkmarser, and Prateau Gris. All throve admirably, and the two trees of last year, with the unknown pear, have now (July) such crowns, that I can put them in pots next spring, when I shall soon see the result.

GRAPE ENTOMOLOGY, ETC.

BY PRATIQUER.

I THANK my old friend, Mr. Reid, for coming to my rescue at a time when I had to spend, not a single hour, but every hour of daylight in my vineyard. He also is a Pratiquer, and I take much pleasure in reading his articles in the HORTICULTURIST. Dear Mr. Editor, I hope you do not intend to give up your Hints on Grape Culture. Positively I shall drop my subscription to the HORTICULTURIST if you do. I would as soon be without cream in my coffee. No, no, don't; not

* Nouvelle Maison Rustique, vol. ii., p. 148.

that I love Pear culture less, but that I love Grape-growing more, and these little short (too short) hints make me feel willing to overlook all shortcomings in your ever welcome monthly. Where are your promised Entomological articles? Do give us grape entomology: which of the insects is hurtful, which friendly? Why the Pennsylvania proverb, no rose bugs, no grapes? I like proverbs, especially Solomon's, sincerely believing that he was really a wise man, in some things; but I like to understand their application. I have learned by experience that the rose bug destroys the grape blossoms, and will prevent a crop; last year I had the satisfaction of pinching upwards of eleven thousand of them on a small grape patch, and this season had not as many score, which I pinched with equal pleasure. They also injure the leaves of the vine. The steel-blue beetle is an enemy, boring the buds, which decay without breaking into leaf, and this includes leaves and blossoms.

I know that the lady bug is a friend, but what are the snapping bug, the large brown beetle, the blue-green rose bug, the same size and general appearance of the steel-blue beetle, coming two months later; the ink bug, the lightning bug, the fetid bug, and the squash bug? What insect is it that heads in the tender shoots, cutting them square off, except a little piece of the outer bark by which it hangs? What good or evil does the black aphis to the tender ends of the grape? What insect causes the swelling on the Delaware leaves? We are on the threshold, and have every thing yet to learn. I have heard of a currant-like parasite on the Delaware and Clinton grape, but have never seen it. Can you describe it?

It is rather early in the season to describe grape experience for 1862. In 1858 I set out many different kinds of grapes, obtained at high cost, and the plants were highly attenuated; some of them I should think were the twentieth dilution. This is my fifth season. Dianas, Concords, and Hartford Prolifics have recovered, and now cover the trellis, and show perfect gems of fruit. Delawares of same season, price $5, come up to the third wire, and show some fruit. To-Kalon nearly the same. Rebecca and Anna very feeble, not reaching the second wire. They have all had the same treatment. I have Delawares of my own raising from buds under glass the last season, which promise another year to surpass their older namesakes, planted in 1858, and growing in the same ground; the difference is, that my own roots were very fine; those that I bought very feeble. The only really good grape roots (except Isabella and Catawba) which I have had from abroad, fit to set out in the open air, was the Creveling you sent me—an honest root, put up, I doubt not, by an honest man, and it is doing credit to its producer.

[Thank you for your good opinion of our humble Hints on Grape Culture. The scores of commendatory letters that we have received in regard to those brief articles are more than a sufficient inducement to continue them to the end, and we shall do so. The articles are doubtless too short, but they are made so in obedience to a popular clamor, the good sense of which we have never been able to

perceive. They have all been written just as they were wanted, and without forethought; and just as we get warmed up it is time to stop. Very short articles on most subjects are the veriest trifles, so far as communicating any amount of sound knowledge is concerned. We have not forgotten the Entomology of the grape vine; that will come in due season. In the mean time we treasure up your suggestions and all others that we receive, and in this way hope to make the subject as perfect as may be. The lady bug and the lightning bug you may spare, but all the others you name may be introduced to the familiar acquaintance of your thumb and forefinger.—The little globules referred to are not peculiar to the Delaware and Clinton. You will find them on vines in common, especially in your grapery. If you look, they can scarcely escape your eye, though they are not much like currants. Grape culture has been much retarded by the sale of poor vines. Having raised good ones yourself, you can judge to what extent this cause has operated. The Creveling we sent you was put up by Mr. Goodwin, of Kingston, Penn., and he must have the credit of it. We know it to have been good. Do not keep silent so long again.—Ed.]

HOW NOT TO DO IT.

BY BOG MEADOW.

Grape culture is no abstruse science, but no one can expect to produce crops of this fruit without labor and care. After the vineyard is set out and arranged, and is ready to return, some fifty, some a hundred fold, the cultivator in many instances begrudges the amount of labor requisite to produce a crop of corn, worth perhaps in market one-fifth the grape crop; but so it is. As I ride about the country, I see so-called vineyards growing up with grass and weeds, the vines running on the ground, or upon poles or trellises without care; neither pruned nor pinched, making long, slender shoots (not arms) on the ends of equally slender growth of former years. This carelessness is unpardonable. "Do men expect to gather grapes from thorns?" They might as well; for well-cultivated thorns will produce *nearly as many* grapes as well-neglected vines. It is painful to see and hear the excuses among the owners of such patches (I can not call them vineyards) of grapes. All mean to do it; but one has his corn to plant or to hoe, his hay to make, his potatoes to dig, and his crops to gather, and so he neither prunes and lays down his vines in the fall, nor ties them up or digs around them in the spring; the ground is not plowed, the laterals are not pinched, and, finally, the fruit is not gathered, for there is none. Now, common sense ought to teach every man, that after he has expended his money to buy or cultivate the roots, prepare the ground, set stakes or erect a trellis, his money is wasted unless he does a little something more; and a man who will not do that something more

brings disgrace upon the profession, and virtually informs the world that the culture is a humbug; yet there are enough who know to the contrary. There are those who really love to cultivate the grape, "to whom the pleasure is as great of being cheated as to cheat," if it is a fraud. Some persons may thus neglect the culture of their grapes from ignorance; the remedy for them is to take the HORTICULTURIST and *read it*. Homœopathic doses will cure this disease. An ancient writer informs us that neglect is no new feature, for he says, "I went by the field of the slothful, and by the vineyard of the man void of understanding, and lo! it was all grown over with thorns, and nettles had covered the face thereof, and the stone wall thereof was broken down."

[We have seen too many so-called vineyards not to know that the picture drawn by Bog Meadow is only too truthful. We can and do sympathize with a poor man who, under every adverse circumstance, and with limited means, is trying to establish a little vineyard that he may call his own; but Bog Meadow does not refer to such. He has in his eye men who can find plenty of time to cultivate their corn and potatoes, and yet, for some unaccountable reason, neglect their vineyards. They deserve to be scolded, for their neglect entails failure, and this greatly retards the progress of grape culture. It may be doubted whether a man has a moral right to enter upon such an enterprise unless he means to give it such reasonable attention as will insure success. We hope all the vineyards will be put in good order before we make our summer tour, so that we may say a pleasant word for all.—ED.]

REJUVENATING OLD HOUSES.—No. III.

BY MYRON B. BENTON.

AT your request, Mr. Editor, I have hit upon a fruitful theme, and I am making my subject longer than I expected.

With regard to the arrangement of the rooms, I believe I have before referred, somewhere in the HORTICULTURIST, to the annoyance of not having the view from one room to another cut off in certain cases where desirable. There are some rooms of a house that it is pleasant to have brought together, and the view as complete as possible between them, as parlors, libraries, etc. On the other hand, it is not desirable to have the whole of a bed-room on the first floor exposed to sight merely by opening a door into the living-room; thus commanding a view, perhaps, of the bed and its occupant. Nor is it necessary to have the doors through the interior of the house in a line with each other, so as to open a vista through, when they happen to be open, from parlor to sink-room. And these are troubles that are easily remedied or avoided in repairing or building. Place the doors in such position that they will not *range* with each other; and those opening into

pantries, bed-rooms, etc., so situated that they will expose only a small portion of the interior of these rooms.

For the color of the exterior of the house, the modern reforms are hardly less objectionable than the old-fashioned white. The change in public taste has given rise to a variety of hues very disagreeable. If white is too glaring, there is nothing gloomy about it; and it is sometimes, when the house is very thickly shaded, not to be discarded. But many of the shades to which it has given place in late years are far too dark, and thus lack an appearance of cheerfulness. While a house-paint should be light, it should be sufficiently removed from white to have a decided tint. Too many used are so near white as not to have a character of their own. Though it have a clear, unequivocal hue of its own, it should still be among that class which are called "neutral tints." Blue, green, yellow, and red, in however light shades, are never so agreeable as the tints produced by various mixtures of these colors. To my own taste there is nothing better, especially for an old house, than a russet—the color of a ripe russet apple. Show your painter the warm, golden cheek of a Roxbury Russet, and tell him to follow that in mixing his pigments, and if he is a good imitator, you will not fail to have a cheerful and every way pleasing complexion on your house. The corner-boards, casings, etc., should never be white unless the whole be so. This in variety breaks up the harmony of effect in the whole, and, in fact, gives the covering of the house an appearance of patch-work. The trimmings should be of the same tint as the rest of the house, but of a different shade; generally the darker is preferable.

There is, to my mind, one very prominent fault of late years in building, especially in the more expensive class of houses, but one that is generally regarded as quite the opposite of a fault. There are often too many verandas, porches, etc., added to a house. The only limit seems to be the length of the builder's purse, the only question arising being that of expense. It never seems to be imagined that the addition of another veranda may be a detriment to the beauty and comfort of a house, instead of an advantage. The cost of these structures is well known to be great, and they are also the most perishable part of the building. It is not uncommon to see a house cramped in its exterior accommodations, yet almost surrounded with verandas. And, setting aside the question of economy, when there are too many of these additions they are an encumbrance. No room which is to be much occupied should be without a part of its windows opening directly out-doors; not shaded even by a "hood," but receiving the perpendicular rays. This is essential both for health and convenience. A room lighted wholly by *horizontal* rays is a very unpleasant one. They are not so essential to appearance as is generally supposed, provided the surrounding grounds are well laid out. Sometimes a trellis, erected at a very trifling cost, and covered with a grape or other vine, will be quite as pleasing. I would not, however, be understood as objecting to structures of this kind in the right *quantity*, only they should not be made to absorb too large a share of the builder's money, or too much of the light of the sun.

In fact, there is no part of a house, not among the absolute necessities, more desirable than a few verandas or porches.

[Mr. Benton's remarks on the color of houses are sensible: we are always running into extremes. We know of a thriving place in which the first two houses were painted of an unexceptionable color; indeed, in the best taste. Many have since been built, but no two of them painted alike; they are striking simply from their oddity, and are a good illustration of Mr. Benton's remarks. We agree with Mr. Benton in his objections to a multiplicity of verandas; some houses are almost lost in them.—Ed.]

INTERIOR VIEWS. No. 3.—EXOTIC GRAPERIES.

BY FOX MEADOW.

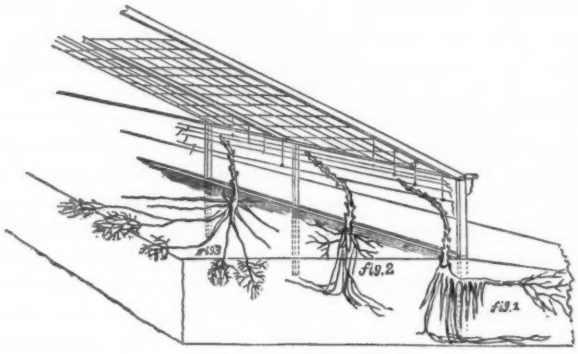
In our last paper we endeavored to show the reader that the natural results produced by our conventional system of practice and education, in the use of the two classes of vines, good and bad, or, in other words, strong and healthy, and the debilitated constitutionally; and that both classes ultimately would be in the possession of strong, powerful roots, one as the other, the difference between poor vines and strong ones being, that in the former case, the roots, when they issue forth from the plant, go direct to the *bottom* of the border; and in the latter case, travel immediately *through* and *out* of it. A mere superficial view of this *quality* in the two classes of vines may lead the reader to infer, that if poor, debilitated vines will ultimately produce as strong roots as strong and healthy vines, that this question of *quality* would be quite immaterial. If such an impression should be presented to the mind of the reader, we respectfully refer him to our last paper, where the difference in growth—*when* growth commences—the ripening of the wood of the first season's growth, and the power of bursting vigorously into new growth the second year, is fully shown. We stated further, that vines having poor roots when first planted, those roots remain for several years in nearly the same condition, "are never resuscitated, and die ultimately." Now in reading over the last sentence when in print, we find we have not explained the cause *why* poor roots die ultimately, and this is nothing more than making an assertion without a proof. Now let us see if we can prove this assertion to the mind of the reader. It is a very important point in cultivation, and will be found to be the *key* which unlocks the door of a very dark room.

We have all read the directions in horticultural books, how to plant vines. We are told to shake the roots out, and evenly and regularly spread them out on the surface of the border; and to improve the root power of the plant, many authors direct that a portion of the cane shall be placed under the soil as well as the roots. Now the object of layering a portion of the cane is evident to all gardeners at

least—an increase in the number of roots? Now who can have any objection to this method of inducing more roots? Your humble servant, "Fox Meadow," has, in the *way* it is done. Now let us examine the movement of the vine, and what its actions are, as soon as it gets planted. First, we shall be careful in preserving what roots the young plant may have, and then we carefully spread these roots evenly and regularly on the border, at the same time layering that portion of the cane which is not required for the inside of the house, one or two buds of this cane being all that is requisite to be seen in the house, and from which is to come forth the new wood or shoot. The vine commences its growth, the sap begins to circulate, and the roots that were so carefully spread out on the border, push forth their little thread-like feeders, and the more these little roots collect, the quicker is the sap circulation. But this sap finds an impediment in its circulation, (downward;) there is an *angle* formed in the stem just under the ground, and this angle was formed when the vine was planted, through the necessity of having those one or two eyes above ground, from which was to issue forth the young cane. We have called that *angle* an impediment, but "authority" has taught us that that impediment will cause the bursting forth of new, strong roots, and we must say that authority is correct, for on this principle do we succeed in rooting a host of evergreens, as well as deciduous trees and shrubs. Now, we do not want the reader to lose sight of the original roots of the vine, as it was turned out of the pot, and spread over the border, for they are growing a little, and we wish you now just to look at the *under* side of that angle in question, and there will be seen some purely white protrusions; none can be seen on the *upper* side of this angle, and they are only seen on the under side where that portion of the cane forms the bend. In a few days' time these white protrusions grow out into strong, powerful roots, and drive directly *downward* with increasing power and strength. It is truly wonderful the size that these roots will attain in one summer's growth; we have found them nearly an inch in diameter. Between these roots which are produced from the angle in question, and the young cane which is being formed, does nearly every particle of the circulation of the sap become restricted. The principal flow of sap is always through the largest channels, and rapid currents will always necessitate their permanent maintenance.

The reader will now most probably see *why* the original roots of vines (if poor) are never resuscitated, and why they ultimately die off altogether. These large tap-roots being formed by our would-be cleverness, brings the circulation nearer home, and the consequence is, that the original roots are thrown out of communication with the leaves of the plants, and, consequently, they ultimately die. Fig. 1 will illustrate this action of the roots as we have found them five and six years after being planted. We have often layered three and four feet of young cane in the border when first planting the vine, but have never yet found that the cane ever emitted roots worthy of notice *between the orignal vine roots and the angle* formed by the process; the principal strong roots are invariably produced from

the angle, and thus *severing* the communication from those immediately behind them. Now if poor vines are not layered in the manner described, but planted *erect*, poor roots will always die, because, as we have previously stated, the plants being no better than cuttings, will, like cuttings, issue new roots just *over* and *above* their original roots from their woody stems, and drive directly to the bottom of the border, as do those issued from the angle just alluded to. Fig. 2 will illustrate the root action of poor vines when planted erect, or without being layered. We affirm that a strong vine, with a plentiful supply of large, living roots, containing their proportion of organized matter to the top such roots have produced, thoroughly well ripened, and cut back to one eye at or previous to planting, *will never grow downward* if planted erect and the roots spread out in the way they are desired to grow; but they will grow *through* the border and *out* of it, (see fig. 3,)



as we have previously stated, the richer the borders are, the quicker are the roots out. We have found the roots of vines more than two hundred feet from the border in which they were planted; and such facts as these only seem to confirm the idea in the minds of many intelligent men who ought to know better, that the roots are after some wonderful and unknown elements, which their princely formed borders do not contain! Now we have shown the reader the cause why roots are carried to the outside and into poorer soils; also, why roots are caused to grow to, and are found in, the bottom of borders.

These suggestions we offer the reader (which are, in fact, practical realities derived from many years of hard toil, mixed up with a great deal of dearly bought experience) should lead him to inquire, of what use have been all the costly materials of which a very great majority of vine borders are composed? Roots that are on the bottom of a border can only imbibe the impure leechings of an unaërated mass of constantly decomposing vegetable matter; and were it not for the system of drainage, which in many cases is a *filter* into which sometimes get

accidentally, or otherwise, fresh air, these roots in question would die long before they commonly do. If the roots are then in the bottom of borders, or have grown through and out of them, it becomes evident that the expensive compounds of which such borders are formed is of no use to the plants, and that if vines grow and produce ordinary fruit with their roots out, and in poorer soils, it is evidence sufficient that crops of grapes can be produced from much poorer soils than many of us have anticipated. Now the apparent wrong in this stage of our culture of the vine, lies simply in the *kind of roots* the plant is induced to form, which are long cords possessing not much else than one gross spongiole, or mouth at its end. We have said "induced to form," because we know by experience that from the conditions by which we have surrounded these roots, they can not possibly, or naturally, produce any other formation. The reason why vine roots are long, is because the compost contains gross feeding material in every particle the spongiole touches, or traverses through. Look for a moment, and see how we have been taught to produce this result. See how the materials recommended for use are to be thoroughly hacked and hewed, turned over and over in some great monstrous heap, lying for a year perhaps, or more, before it is considered fit for use. Listen to the directions to "thoroughly incorporate" every particle of the "great whole" like so many drugs in the prescription of some noted physician in a case of life and death! Does not this wonderful work of compounding and incorporating tend to place all and every element the root may require, directly in and surrounding every spongiole or mouth the plant may produce? and under such flourishing conditions are not the roots *induced* to drive furiously onward until they are brought blindly to an awful precipice, and then hurled headlong to destruction? Are we not wonderful and ingenious men to so construct borders for the deceptive allurement of the vine's roots into a land that *don't* "flow with milk and honey," and then stand and gaze, and wonder how they got there? Does the reader now see that we, the gardeners, possess the means at will, and are really the cause of the vine producing these long whips of roots? Yes, for we would not like to insult the intelligence of this journal so much as to think for a moment that this fact was not evident to the perception of every reader. Now if your readers are convinced that we are the agents in producing a species of roots which have but one feeding mouth where five hundred or five thousand should be, then it will not be a very difficult matter for the reader to comprehend that we also can become the agents to *compel* the vine to produce short roots, with an innumerable amount of feeders to work in, and through, every particle of the soil that is placed, and prepared for them. Now if we can change the entire character of the roots from long tap-roots driving either to the bottom of the border, or, on the other hand, through and out of it, for fibrous roots, issued forth in untold numbers, feeding regularly on the compost we have made, then we shall have the satisfaction of knowing that our labor and materials are not wasted, and that we should then reasonably expect the vine, from its good feeding, to produce compensating results.

Now how are we to exchange the character of these long roots into small fibrous ones? Simply by reversing the conditions which produce the long useless ones. These conditions, of course, are the alterations of the materials of which we have been composing our borders. Some years ago, and as now, we grew a great many roses for flowering during the winter; the cuttings were struck principally in the spring, and then turned out to grow in open ground during the summer. We invariably selected the richest ground we could get in order to get strong plants for potting by the fall. These roses, however, always made strong roots and went directly downwards, so that often there was much trouble in taking them up without cutting half their long tap-roots off, and this we did not care to do for obvious reasons. Further, it was impossible to take up any of these plants with earth on them, because, having no fibrous roots, it would all fall away in digging them up. Sometimes we wanted soil to the roots, for it enables us with some varieties to get a few roses much earlier than otherwise. One season we had more cuttings than filled our piece of deep rich ground, and, consequently, had to take a piece that we did not think much of, it being more than one-half sand, the other portion being a vegetable matter analogous to leaf-mould. Now what was our surprise in the fall of the year, when these plants came to be taken up—there was not an individual rose that had any tap-roots to them! No, not one! We took flat-pronged forks, and lifted each rose with large balls of the earth, which covered the entire fork, and this could be carried to any reasonable distance in that way without parting with the soil, so numerous were the fibres that held it together. This was not the only marked difference; the plants had ripened their wood hard up to the very ends, and the wood of the whole which grew in this soil was much shorter jointed, and every way better adapted to the purpose they were wanted for than any we had grown previously.

Here was a lesson for us in grape growing; but as we have already over-stepped our limits, we will leave the reader to consider what this lesson was, till we shall trouble his attention again.

(To be continued.)

[We hope these articles of Fox Meadow will be read attentively by that class of people who seldom or never look at things beneath the surface. A horticulturist, above all others, should go to the "root" of all matters pertaining to his profession. He may or may not arrive at conclusions precisely identical with those of his professional brethren engaged in similar investigations, but he will undoubtedly add much to his own knowledge, and lighten the way of many who are groping in the dark. Some remarks suggested by Fox Meadow's articles will come in properly hereafter. In the meantime we hope they will awaken a spirit of inquiry.—Ed.]

WINE MAKING.

BY JOHN E. MOTTIER, CINCINNATI, OHIO.

As the time for making wine is approaching, I will endeavour to comply with your request, though I can not give any thing new more than I have heretofore written.

In order to make good wine it is necessary to have a good cellar, clean casks, press, etc. First of all, have your grapes well ripened; gather them in dry weather, and pick out carefully all the unripe berries, and all the dried and damaged ones; then mash or grind them with a mill, if you have a proper mill for the purpose. Be careful not to set your mill so close as to mash the seed, for they will give a bad taste to the wine. If you wish to have wine of a rose color, let the grapes remain in a large tub a few hours before pressing. The longer time you leave the grapes before pressing after they are mashed, the more color the wine will have.

For pressing the grapes, any press will answer, provided it is kept clean and sweet.

After you have collected the must in a clean tub from the press, have it transferred into the cask in the cellar. Fill the cask within ten inches of the bung; then place one end of a siphon, made for that purpose, in the bung, and fix it air tight; the other end must be placed in a bucket containing cold water. The gas then passes off from the cask without the air coming in contact with the wine, which would destroy that fine grape flavor which makes our Catawba so celebrated. When properly made, the must will undergo fermentation. Keep the end of the siphon that is in the water fully four inches deep, so as to exclude the air from the wine. When it has fermented, which will be in fifteen days, fill the cask with the same kind of wine and bung it loosely for one week; then make it tight. Nothing more is needed till it is clear, which, if all is right, will be in January or February next. Then, if perfectly clear, rack it off into another clean cask, and bung it up tightly until wanted. If the wine remains in the cask till fall, about November, it will improve by racking it again. Be sure to always have sweet, clean casks. Do not burn too much brimstone in the cask; I have seen much wine injured by excessive use of brimstone, generally by new beginners. For my part, I make little use of it.

You can make different qualities of wine with the same grape by separating the different runs of the same pressing. The first run is the finest, if you want to make use of it the first season; but it will not keep long without losing its fine qualities.

To make good sound wine that will improve by age, the plan is to mix all up together. The very last run will make it rough, but it will have better body and better flavor when two or three years old, and will improve for a number of years. The first run will not be good after two or three years.

I have fully tested the different ways of making and keeping wine these last twenty-five years.

[We have to thank Mr. Mottier for laying before our readers the results of his long experience in wine making. Ranking as he does among the very best and most successful wine makers in the country, his brief directions have a marked value; their brevity, indeed, is their only fault. We should be glad, as would also all our readers, to have him go into minute detail, and we trust that he will hereafter do so. We have heretofore borne cheerful testimony to the excellence of Mr. Mottier's wine; we should be glad to see wine equally good much more common than it is, that the "doctored" importations might be driven out of the market. The reader will observe that nothing is said here about sugar or brandy. Mr. Mottier uses neither.—Ed.]

DESIGNS IN RURAL ARCHITECTURE, NO. XI.—A SUMMER HOUSE OR TEA ARBOR.

After quite a lengthy vacation, we once more greet our friends the readers of the Horticulturist, and offer them a continuation of our designs for rural out-buildings.

We give at this time a suggestion for a Rustic Summer House, simple in plan and easy of construction, suitable for some shady place in the corner of the garden, or among the trees and shrubbery of the park.

It is somewhat different in plan from the ordinary Summer House, being divided into three parts, all covered by one roof, the central portion or room being separated from the veranda by a railing of sawed boards like that shown on the front in the engraving, with movable blinds above it, making, when shut, a close, distinct room.

Seats of plank are provided on the front and rear ends, and a heavy table is supposed to be placed in the centre.

This room, measuring nine feet by fifteen, will be a pleasant and good sized apartment to take tea in, of a warm summer evening, and from its shape seems peculiarly adapted to such a purpose.

Its construction is as follows:

The frame is made of thirteen rough posts of spruce, five inches square, with the edges chamfered off, framed into sills of six by six stock, and into plates of four by five stock. The sills extend beyond the main building on both sides, and form the sills of two verandas, and an extra plate is supported by the veranda posts which are of rough untrimmed cedar.

The rafters run from the ridge of the roof down across the first set of plates, and form a footing on the lower plates, so that one roof covers the whole building;

and this roof is covered with rough hemlock boards, and finally with bark laid on in the overlap manner.

The gables are finished with rough boards sawn out in some ornamental pattern, and there is an ornamental railing of the same around the whole room, as well as on the sides of the verandas.

The space between this railing and the roof on the main building is fitted with slat blinds, which are made to rise and fall by means of pulleys and hemp cord, so that the room may at will be converted from an open arbor to a close room.

The inner side of the roof may be finished off with cedar twiggs, so as to repre-

SUMMER HOUSE.

sent in a measure an open timber roof; and in this manner, if tastefully finished, a very pretty effect may be produced.

The table in the centre should be strong and substantial in appearance, and be made to open and shut like a common dining table, with two or three drawers underneath, to accommodate such conveniences as one might wish to leave there.

The seat at the two ends should be made of planed slats, two or three inches wide, running lengthwise, and nailed to standards *hollowed out* from front to back,

so as to present a more comfortable surface to the sitter than the flat seats commonly used.

The roof should project from twenty to twenty-four inches.

The whole structure, when completed, should be painted with a couple of coats of some dark, unobtrusive colors of lead and oil paint; and then flowering vines should be planted around it, and trained to climb the sides and roof, and twine around the veranda posts; and tall trees should be planted near it, so as to hide it in their shade; and high growing shrubs should be grouped thickly around it, to give it a snug, secluded air.

By this means a neat, attractive retreat may be constructed, far prettier, and more inviting, and at a much less cost than those elaborate structures of some classical style which one almost invariably meets with in modern country places.

[We most gladly welcome Mr. Harney back again after his "vacation," which has not been an idle one. The interruption of his interesting "Designs in Rural Architecture" has been greatly regretted, and their continuation will be regarded with pleasure by all our readers.—Ed.]

THE MONITOR STRAWBERRY.

(*See Frontispiece.*)

BY THE EDITOR.

We present this month a portrait of the Monitor Strawberry, one of Mr. Fuller's seedlings, recently alluded to as No. 42. For a number of months we have been directing a series of experiments, having in view the improvement of our frontispieces. The result of these experiments have not, in some respects, been as favorable as we could wish. The photograph is altogether unexceptionable, but it is difficult to get it properly colored, and is attended with most vexatious delays. The next best process for some objects is the one presented this month. It was executed by Mr. J. W. Orr, of New York, and while it is satisfactory to us, it is very creditable to him. Artistically, it is one of the very best things that we have yet presented to our readers, and as such we give all a colored plate of it. We hope they will accept this as an evidence of our fixed determination to keep the Horticulturist up to the mark, in spite of the war. These experiments have been attended with no little expense, but have been rich in experience, of which our readers will receive the benefit.

Mr. Fuller, as we have already stated, has devoted a considerable portion of his time for several years to the raising of seedling strawberries. At first he simply planted the seed from a fine berry, depending upon chance for a good fruit; the result proved to be unsatisfactory. He next resorted to hybridizing,

and, as was to have been expected, obtained fruit of a better class; but even with this careful direction of means, the per centage of really good fruit was not large, and comparatively few reached the standard of excellence he had proposed to himself. His object was to obtain a berry that should unite in itself the chief points of excellence of a strawberry, such as earliness, size, firmness, good flavor, productiveness, vigor, &c. Mr. Fuller's beds consisted of several hundred seedlings, which we carefully examined during two years. During the first year we selected a dozen or so as the best. The next year three were selected as possessing the above points of excellence, viz., 42, 7, and 53, the Monitor, our present frontispiece, being one of them, and also the earliest. They have all been purchased by the Tribune Association for distribution among their subscribers, the price paid being $3,000. Mr. Fuller, therefore, will not be benefited by any notice of his seedlings, for he has none to sell, and none will be able to get them for some time, except subscribers to the *New York Tribune*. This is a somewhat novel mode of disposing of strawberries, but one upon which the parties interested should be congratulated. The Monitor is the firmest and most juicy of Mr. Fuller's seedlings, and we think will bear carriage well. The fruit is large, and of a good scarlet color. The form is conical, some berries, however, being a little flattened. The flesh is white, firm, and moderately juicy, and the flavor very good. The flower is hermaphrodite or perfect, and needs no other kind to fertilize it. The calyx is large, and parts from the fruit much easier than many other kinds. The foliage is large, and has substance in it. Last, but not least, it is very productive. A strawberry thus early, productive, firm, and good, is by no means common. The Wilson possesses some of these points, but the Monitor is far better. A pomological description of all three will be found in our July number.

Of the other two, Nos. 7 and 52, we will simply say here, that No. 7 (Ridgewood) is nearly as good in all respects as the Monitor, while No. 53 (Brooklyn Scarlet) is even better, though a little later. It is a very handsome berry. The Tribune Association may consider themselves fortunate in having secured these berries.

DOMESTIC WINE MAKING.

BY T. B. MINOR.

There are many grape-growers in the United States who are now able to make a few gallons, or a barrel or two of domestic wine, and who are interested in knowing how to make it, so that it shall be good wine—not vinegar, nor a beverage no better than fair bottled cider.

In the first place, I will state the process of wine making in Southern Ohio, in and about Cincinnati, where over 2,000 cases are cultivated in vineyards.

The varieties of grapes grown are the Catawba and Isabella principally, the

former being nine-tenths of the growth of the vineyards. The Herbemont, Delaware, Concord, Cape, Norton's Va. Seedling, and some few other varieties, are cultivated to a small extent; and it is probable that, in the course of a few years, some new varieties will almost entirely supersede the Catawba, the present staple variety, owing to the liability of that grape to mildew.

The average produce per acre of vineyards in Ohio is about 400 gallons of wine, which is worth at the press about one dollar per gallon, affording a net profit of about $150 per acre. Germans are the principal grape-growers, who dispose of their wine, as soon as the *must* (grape juice) is pressed out, to the wine *makers*, who are not generally grape growers.

The process of expressing the *must* is as follows:

The grapes are left upon the vines till fully ripe, when they are carefully picked, and all imperfect fruit thrown aside, to make either vinegar or an inferior quality of wine. The grapes are then placed in the mill for mashing, the mash being immediately put into the press, unless it be required to make a darker colored wine, when the mash is allowed to remain unpressed a few hours, which effects that object, the crimson juice of the inner coat of the skins of the grapes becoming more thoroughly mixed with the *must* than would be the case if it were immediately put to press.

As soon as the *must* is expressed, it is put into clean casks and taken to the wine manufacturer, and sold at the market value.

By adding water to the mash that has been pressed, either good vinegar or a second quality of wine may be made. The same use is also made of unripe and imperfect fruit.

Neither sugar nor spirits, as a general rule, is used in making wine in Ohio; but the quality of the wines made there is not such as we desire to see manufactured in this country, and do not equal in flavor the most of imported wines.

The wine manufacturer, in many cases, purchases *must* from a score or two of vineyards; and in order to make his wine all of one quality, it is emptied into a large vat or cistern, from which it is drawn into casks, which are first fumigated with sulphur, by burning a rag dipped into melted brimstone in the bung-hole, and confining the fumes in the casks for a few hours to remove all impurities.

The process of fermentation now proceeds through a siphon, one end going through the bunghole and the other being placed in a pail or pan of water, about four inches below the surface. The gas arising in the casks goes through the siphon, escaping through the water, while no air can return into the casks through the same channel.

This fermentation lasts about fifteen days, when the casks are bunged up rather loosely for a week or two, and then they are filled full of wine, some being reserved for that purpose, and bunged up tight.

In the following March, or early in April, the second fermentation takes place. This fermentation commences with the warmth of the season, and in a higher lati-

tude does not begin till May or June. The wine should be racked off before it commences to ferment, put into new, clean casks, or returned to the old ones, after cleaning them; and then the *fining* or clearing process is to be put in action, consisting of the whites of about a dozen of eggs to a barrel, well beaten, and then mixed with a half gallon of wine, and then the whole put into the cask, and mixed through the bung-hole with its contents. This mixture settles very slowly, and carries down with it all impurities in the wine.

In the following fall the wine is again racked and bottled, or left in casks, when it is ready for sale, though it improves with age.

To make a few gallons, or a barrel of wine, for "home consumption," as many families are now able to do, the grapes are to be picked and assorted, as before stated; and in the absence of a wine-mill and press, they may be put into a clean cask or tub, and mashed with a clothes pounder. Indeed, no better instrument is required. About three pecks of grapes may be mashed at a time; and the entire quantity for a barrel of wine can be mashed in a few hours, and the *must* expressed in about the same time. From six to ten bushels of grapes, according to the variety, will make a barrel of wine. The mash may remain in an open cask till all is ready to be pressed; and some wine makers think that it makes better wine by leaving the *must* in the cask or tub till it begins to ferment; but I doubt that allegation. The wine, as I have already stated, will be of a darker color, and more than that for its advantage, I think, is not the result.

The next and more difficult process in wine making, when no press exists, is to press the *must*. I know of no better way than to have the *must* in some outbuilding, where the rough studding of the side of the room is uncovered. Set a clean wash tub against a stud, with a stout board across it to sustain the *must*, after being put into a stout bag, made of strainer cloth, about two gallons at a time.

A lever is now to be brought to bear upon the bag, about eight inches wide at the place of contact, made of a piece of plank, eight or ten feet long. A small piece of plank is to be strongly nailed to the stud, a little higher than the board upon the tub, as a "purchase" for the lever.

Now, if these "fixins" are properly arranged, there is no difficulty whatever in expressing a barrel of *must* in two or three hours, and with very little waste.

This question here arises with the beginner in wine making, "Shall I use any sugar, and if any, how much?"

It will be folly to attempt to make a good wine—an article that will stand the heat of summer—without sugar, unless the *Catawba* or *Clinton* grape be used, and then it is quite doubtful whether any person can make a wine that will not sour, except the extensive wine makers of Ohio and elsewhere.

It is not supposed that these two varieties of grapes will make better wine without sugar than several other kinds will with the use of it; but they are better adapted for wine, without sugar, than any other kinds with which I am acquainted,

and which are being cultivated for that purpose. But I contend that a much better wine can be made of varieties of grapes that require sugar, than was ever made from the Catawba and Clinton grapes without it. It is a mistaken idea, in my opinion, which some people have, that wine, to be "*pure*," must contain nothing but the pure juice of the grape. What is there in sugar that is not in the pure juice of that fruit? I recommend, therefore, the addition of from two to three pounds of the best white, granulated, or coffee sugar, to every gallon of *must*. No water should be used, as it will require all your skill to make a wine that will not deteriorate in quality during the following summer season; and the addition of water will render your task more difficult.

Again, the question arises with the inexperienced wine maker, "Shall I not put a little brandy or other spirits into my wine, in order to make it sure to keep well in summer?"

Here is matter for a wide difference of opinion. One will tell you that you will spoil your wine, if you use spirits of any kind, while another will say it is impossible to make wine that will stand our climate, season after season, without the addition of spirits of some kind. A great deal of domestic wine, made in States east of Ohio, is lost every season through some fault. They who use no sugar are sure to fail, and many who do use sugar make only a fair vinegar, after it has stood one season, and they give up wine making in disgust. If one desires to use spirits of any kind, an article called "pure spirits," without flavor, is probably as good as any that can be used. Put in from three to six gallons per barrel of *must*, according to the strength you desire. This will arrest fermentation in some degree, but the wine will be pretty sure not to sour in summer, if you use the usual quantity of sugar; and if all the processes are carefully attended to, you will have what most people will call an excellent wine, with something of a "snap" to it, which is much better than drinking a cross between weak vinegar and old cider.

The *must*, with the addition of the sugar, and the spirits, if any, is to be put into a cask, filled nearly full, set in a cool, airy cellar, and allowed to ferment. A siphon is not absolutely necessary; but if one can be obtained, made of glass or tin, it is better to use it. If not used, put in the bung, then bore a gimlet hole at the side of it, into which put a spile so loosely that the gas can escape around it. At the proper time drive in the spile, and leave the wine to be racked off as before stated.

When less than a barrel of wine is made, kegs or half barrels should be used, and all the processes carried on as with larger casks.

[Mr. Minor has described very well indeed the method of making wine usually pursued around Cincinnati. We are sorry not to agree with Mr. Minor in his opinion of a *pure* wine. The very few good wines that are made receive no addition of sugar or spirits; and a grape that will not make such wine is not a wine grape, and should not be used for the purpose. The sooner this is comprehended the sooner we shall have good wines. That such wines will keep as well as the corresponding class

of European wines, we know perfectly well. The reasons for all this we shall endeavor to make plain in our grape articles. We will add here, that the quantity of sugar recommended by Mr. Minor is sufficient to make any fermented juice keep without the further addition of spirits; but it will be understood that we discountenance the use of either.—Ed.]

PRACTICAL PAPERS, NO. V.—HOW TO GROW GRAPES IN GARDENS.

BY OLAPOD QUILL.

The other morning, in conversation with a gentleman upon the subject of the cultivation of the grape, the readiness with which fine crops might be obtained and the pleasure to be derived to the cultivator, he made the following remark:

"I can not grow the grape. I have a fine spot of ground, a very fine garden, with a large surface of brick wall facing a southern aspect. I have tried and tried in vain, and can not get any grapes. What is the reason?"

Yes, what is the reason?

As many other persons may be desirous of knowing how one or two good, strong, healthy vines may be made to bear even luxuriantly, in a small garden plot, or beside a brick wall, and occupy at the same time but little space, the following practical suggestions may be of some service.

In the first place, you have a small plot of ground; if flanked by a brick wall of a southern aspect, so much the better.

The next question is, what kind of vines shall I plant in order to secure a good crop of grapes? (provided I can grow any.) I wish for good eating grapes.

From the following vines, a selection may be made, that would in most cases, give good satisfaction, viz.: The Catawba, Isabella, Concord, Creveling, Diana, Rebecca, and Union Village. The above are all good grapes, and will undoubtedly always hold a high rank among the reliable out-door grapes.

Having made your selection from the above named vines, upon the manner of planting the same, your future success mainly depends.

I have found from carefully noted experiments, that the grape vine should never be planted in wet soil. It requires good drainage. In planting a grape vine, with the expectation of having it grow and bear fruit, the ground should first be drained of all its surplus water, and most thoroughly trenched, to the depth of three feet, not less than two feet and one half at the least. The trench should be for the border, from four to six feet or more wide, according to the space of the ground. Having thus prepared the trench, fill it with oyster shells, bone dust, wood ashes, lime, broken bones, etc., two-thirds full, and over this place six inches

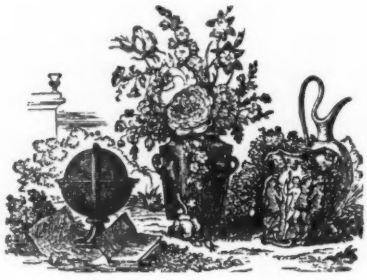
of good garden mould. Upon this mould set out your grape, placing the roots at an equal distance apart, carefully spreading the rootlets upon the mould, and carefully covering up the same with a preparation of mould made from equal parts of garden soil and scrapings taken from the road.

When the trench is nearly filled, a shallow basin or hollow may be left of two or three inches depth to receive the rains, and waterings if necessary. If the vines can be trained on a trellis, or "lean to" against the brick wall, so much the better will be the prospect of getting earlier grapes.

Yet under almost any circumstances, one can with ordinary care raise *good grapes*. Good grapes may be grown upon a small lot, six feet distant from each other, and trained upon stakes six or seven feet high. They should be treated in the same manner as the above, and placed in such position as to receive as much of the sun's rays as is possible.

Having thus answered the question so often asked by so many persons, "How can I raise grapes in my garden?" and told them of our own experience, we having informed them how to plant the vine, when they have grown them, ready for pruning, we will tell them how we prune and train our own; and of the success we meet with from our own experiments and efforts.

[Olapod's grape border has the merit at least of being peculiar, if not original. Thirty inches of bone dust, bones, lime, wood ashes, etc., and only six inches of soil! It is not very much like the border we should recommend for the same purpose; and how a grape vine is to grow in it we can not imagine. Besides, its cost will frighten most people out of the idea of growing a vine, admitting a vine will grow in it. We are inclined to believe Olapod has got a little confused here. Quite as strange as the composition of the border, is the omission of the Delaware grape. We think it might have found a place among so many.—Ed.]



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, Remittances, Packages by Express, Advertisements, &c., should be directed to MEAD & WOODWARD, Editors and Proprietors, 37 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

LANDMARKS.—We have lately been shown some sheets of a new work under this title, by Dr. C. W. Grant. A more expressive title, perhaps, would have been Pomological Landmarks, as the work will be devoted to pomology. The sheets that we have seen are devoted to the Strawberry, and the subject is treated in a manner that is highly interesting. There is a degree of freshness in the style and manner that has been adopted that makes very pleasant reading. The Doctor's own experience is given somewhat in the style of a diary, the dates forming landmarks of historical value. As an example of the style and manner of treating the subject, we give an extract, from which the reader can gather an idea of the Doctor's preferences and mode of culture at the end of twenty years' experience:

"I should, perhaps, state at the conclusion of my twenty years' experience what kinds and how many I now cultivate for my own use, so that, all things considered, I may have the largest measure of enjoyment from strawberries for the longest time, early and late.

"I cultivate only Bartlett and Triomphe de Gand. If Buist's Prize, Longworth's Prolific, Boston Pine, Fillmore, Downer, Vicomtesse Hericarte de Theury, and Constante were added, I should get no addition in the way of variety, and perhaps much difficulty in keeping separate beds; and, in making them ready for use, constant care and trouble will be required to keep them separate.

"But, supposing this all done, nothing desirable is gained. The first two (Buist's and Longworth's) are to every palate far from giving as much enjoyment in flavor as those named; and of the whole number, Boston Pine is the only one that can come into competition with the Bartlett; but it has no superiority over it in any respect, and is not nearly so tolerant of negligent treatment. The others may all be brought into comparison with Triomphe de Gand, and offer no distinct sensation in the way of flavor, and no advantage in any one point. Two of them may be found to be equals—Vicomtesse and Constante.

"I am in expectation of admitting one more, that promises to continue the season later than Triomphe de Gand, with fruit of largest size, having the wild strawberry flavor in full, and borne very high from the ground. It must sustain one season

more of trial, when, if its promises of three past seasons are fulfilled, it may be admitted for having a distinct delight in flavor and high merit in all respects. Some would admit Burr's New Pine, but with those who have cultivated it, and myself included, it has gone into disuse.

"When grown by the curious amateur, the number may, with interest for a time be indefinitely extended. They are all beautiful and interesting to make up the variety for an occasional party, but not those that one would choose to make every day life with; and when the interest that for a moment only attaches to variety has passed, the only difference which they will be found to have from one or the other of our duo will be very nearly measured by their degrees of inferiority. I would remark, in reference to the Bartlett, that for the year past I have entertained some suspicion that it may be a Boston Pine so changed by circumstances as not to be recognized by the best judges who are most conversant with both. Its characteristic differences are, much darker color, less firmness of flesh, more abundant foliage, bearing more abundantly than any other variety under negligent treatment, which is the reverse of the Boston Pine. In carrying its fruit high above the ground, Boston Pine is in some degree superior to the Bartlett, but the latter carries its fruit always well up from the ground on strong, woody scapes.

"I have grown strawberries in every variety of soil, from heavy clay to light gravel and pretty open sand, including a reclaimed alder swamp, and have found but little difference, so far as crop is concerned, but the difference in cost of preparation is very great. In every garden that is fit to be called such, the conditions of a strawberry bed are always present. This is not intended to say that all good, rich garden soil is fit at once for the reception of strawberries, but the contrary; for soil that has been well cultivated for a series of years, although it may be rich and deeply worked, is not to be planted with strawberries without amendment, and the compost which I have named, or sods, or muck, including leaf mould, with some stable manure, are the suitable materials for this purpose. Without this, failure will be likely to occur. In fitting the ground for the best results in the one, it is fitted for the other, and a well-prepared strawberry field, after ceasing to use it for that, has undergone the best possible preparation for any kind of fruit, be it trees or vines, provided the ground has been worked to sufficient depth. But much less depth will give very satisfactory results with strawberries than would be thought permissible for a more permanent planting, as for a vineyard or orchard of standard pears. Under favorable circumstances, eighteen or twenty inches of depth will answer very well for strawberries; but no one who aims at good success and permanence with standard pears, will plant on ground that has been worked less than three feet. Still, the strawberry culture has been one great step in the preparation; and when the vines are dug under, the ground will from them alone have received more enrichment than it will have lost by two good

strawberry crops, which, if well managed, have enriched the pockets of the owner also.

"Out of the number that I have tried, only few have been named, but those have been the most noteworthy, and generally both the best and the types of classes. La Constante and Vicomtesse Hericarte de Theury, after several years of trial, may be said with certainty to be excellent in all respects, but the utmost hope that can be fairly entertained of them is, that they may equal Triomphe de Gand, which may be taken as the representative of them.

"Every year hundreds of seedlings are produced in this country, and as many thousands in France and Belgium, by good cultivators who know how to prepare them for exhibition, and consequently every exhibition is teeming with those that make a beautiful show, and many of them are really very good; but now, when the strawberry appears to have approached to near perfection, it must be one of rare excellence that will equal even our three or four best kinds. But the effort to produce better is just as laudable now as it was in the days of Keens, and the means with which to do it ample and well ascertained.

"In my next number I shall give precise directions for the preparation of the ground for fall and spring planting, for garden and field culture, and tell how to grow seedlings, and also describe some of the most important kinds, and in a subsequent number give directions for late and early forcing."

A new Bedding Plant.—One of the most beautiful plants that we have grown this season is the *Coleus Verschaffeltii*. It is an ornamental leaved plant, being of a very striking dark crimson. In the open air it is of a compact, symmetrical form, and grows rapidly. Either in masses or singly, it is a very beautiful object. It is propagated by cuttings with the utmost ease. We think it is destined to be a very popular summer border plant. It is not hardy.

Mr. Mace's Vineyard.—We recently passed through Newburgh, and stopped for a moment to look at Mr. Mace's new vineyard. Our examination was hasty, expecting to repeat the visit soon. We found every thing in admirable order, the vines making a beautiful growth, and giving promise of a large crop of fruit. Those who wish to see how the Delaware can grow when well treated, should give Mr. Mace a visit. We have no doubt he will feel a just pride in showing his vineyard to all who may wish to see it. For the present, we can only repeat what we said of it last year.

American Institute Prize Essays.—The Institute has completed a very liberal list of prizes for Essays on a great variety of subjects relating to Agriculture, Horticulture, the Mechanical Arts, etc. We call particular attention to these prizes, as being worthy of the consideration of all parties interested in either of these departments of industry. Circulars may be obtained on application at the Institute in the Cooper Union Building, New York.

THE ILLUSTRATED STRAWBERRY CULTURIST.—This is a new book on the Strawberry by A. S. Fuller, of Brooklyn. It is a thoroughly practical work, giving the results of Mr. Fuller's experience in the cultivation of the strawberry, as well as directions for raising seedlings by hybridizing, etc. It is written in a style that will be easily understood, and in following its directions, not many will fail to grow good strawberries. All lovers of the strawberry should send ten cents in stamps to Mr. Fuller, and get the book.

BROOKLYN HORTICULTURAL SOCIETY.—The fall exhibition of the Brooklyn Horticultural Society will be held at the Academy of Music on Tuesday, Wednesday, and Thursday, September 23d, 24th, and 25th. The audience room will be used on this occasion; and when floored, as it will be, it makes an admirable room for an exhibition. We hope the members of the Society, and others, will make a determined effort, and eclipse all former exhibitions. Circulars may be had of the Secretary, C. B. Miller, 634 Broadway, New York.

THE AMERICAN ODD FELLOW.—Mr. Orr, the publisher, has sent us a new monthly magazine with the above title. It is devoted exclusively to Odd Fellowship, and to the members of the order must prove a welcome visitor. It is neatly printed on good paper, and furnished at one dollar a year.

CONNECTICUT STATE FAIR.—We learn that the Eleventh Annual Cattle Show and Fair of the Connecticut State Agricultural Society will be held at Hartford from the 7th to the 10th of October, both inclusive. We hope the people of Hartford will be compelled to make very extensive preparations.

FAIR OF THE INDIANA STATE BOARD.—We have received the Premium List of the Tenth Annual Fair of the Indiana State Board of Agriculture, which will be held on the Military or old Fair grounds, immediately west of the city, two squares from the State House. It will commence on Monday, September 29, and continue till the fourth of October. The prize list is a very liberal one, amounting to some $6000. We hope there will be a large display of articles, and a great crowd of people to look at them.

OHIO FIELD NOTES.—We learn from the last issue of this welcome weekly that it has been merged in the *Ohio Farmer*, under which name it will hereafter be published, Mr. Harris still continuing at its head, which is only saying that it will be a spirited and able journal. Brother Harris, we wish you a jolly good time, and a very great measure of success.

THE AIR-PRESSURE CHURN.—We are particularly fond of testing new inventions, especially those relating to Horticulture, or in any way pertaining to rural life. Mr. Hilton, the agent, 58 Cortland street, recently sent us an air-pressure churn, and we have had a good "turn" at it. It is in the form of a keg or small barrel, set upon a frame, and turning upon its smallest diameter by means of a crank. One head is movable, but fits air-tight. To the other head an air-pump

is attached, by means of which air is introduced until a considerable pressure is produced. The churn is turned some fifteen minutes, and the result is an abundance of hard, even grained butter. It has always been objected to patent churns that they will not make butter of as good quality as the old dash churn, and we are willing to admit that there is force in the objection; but it will not hold good against the present one. It embraces, more nearly than any other that we have seen, the principle of the dash churn; the milk being forced against the dasher, instead of the dasher against the milk. The condensation of the air, we think, assists materially in a more perfect separation of the butter from the curd; for we find, on trial, that the air-pressure churn will produce a greater amount of butter from a given amount of cream than the dash churn. On the whole, our experiments with the air-pressure churn have been very satisfactory.

COMSTOCK'S ROTARY DIGGER.—We were lately present at a trial of Comstock's Rotary Digger, at Flatbush, L. I. There were a number of gentlemen present, not the least interested of whom was Mr. Howe, famous as the inventor of the sewing machine. We shall not at present describe the machine further than by saying that it is a cylinder mounted with steel tines, and moving on wheels. These tines can be arranged so as to enter the soil to the depth of twelve inches, or even more. The machine can be thrown out of gear, so as to move readily and easily over any surface. The present implement, drawn by one pair of horses, broke up and pulverized the soil full eight inches deep, and of the width of about three ordinary furrows; thus doing the work of three yoke of oxen with the plow, and doing it rapidly and well; much better, indeed, than it could be done by any plow now in use. The action of the machine resembles that of the spade. The soil in which it was tried was a compact loam, neither light nor heavy. The machine was followed about the field, and its operation watched with profound interest. Some criticisms were indulged in, which were listened to by Mr. Comstock respectfully, and even eagerly, for he does not claim that the machine is yet as perfect as he can make it; some defects, indeed, he pointed out himself. We think (and said) that the number of tines might be reduced at least one-half with advantage to the work, and a great saving of friction. But Mr. Comstock noted all these criticisms at the time, and has gone home to perfect his machine. For simplicity, cheapness, and good work, we have seen no implement that has given us greater satisfaction, and few that have given as much. We think it is destined, when perfected, to make a revolution in plowing. We hope to see the day when soil can be thoroughly broken up and pulverized without a dead furrow.

BOOKS, CATALOGUES, ETC., RECEIVED.

THE PROPERTIES OF FLOWERS AND PLANTS, by George Glenny.—We are indebted to C. B. Miller, 634 Broadway, for a copy of the above work, which has for a long time been regarded as a standard work in England. The near approach of our annual horticultural exhibitions seems a fitting time to call attention to such

a work. Though we do not agree with some of Mr. Glenny's rules, regarding them as too stiff and arbitrary, we still think some rules are quite necessary, especially for judges. A work of this kind should be in the library of every horticultural society; if not adopted as a standard, it will furnish a good basis upon which to frame one.

C. Reagles & Son, Union Nurseries, Schenectady, N.Y.—Wholesale Catalogue of Fruit and Ornamental Trees, Vines, Shrubs, etc. 1862.

Ellwanger & Barry, Mount Hope Nurseries, Rochester, N. Y.—Wholesale Catalogue or Trade List of Fruit and Ornamental Trees, Shrubs, Roses, Dahlias, Bulbous Roots, Border Plants, Seedlings, etc., for autumn of 1862.

Edward Tatnall, Wawaset Nurseries, Wilmington, Dela.—Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, etc.

The Historical Magazine, and Notes and Queries concerning the Antiquities, History, and Biography of America. August, 1862. New York, Charles B. Richardson, 264 Canal street. London, Trübner & Co.

The Journal of the Illinois State Agricultural Society. Published monthly at Springfield.

W. H. Risley, Berlin, Conn.—Catalogue of Fruit Trees, Grape Vines, etc.

J. M. Thorburn & Co., 15 John street, New York.—Catalogue of Imported Dutch Bulbous Roots, Hyacinths, Tulips, Narcissus, Crocus, etc., with Directions for their culture. Autumn of 1862.—The Messrs. Thorburn are early on hand this season. We are glad to know that the war and the tariff will not prevent us from having fine bulbs this winter.

W. R. & M. D. Willson, West Bloomfield, Ontario Co., N. Y.—Wholesale Catalogue of Fruit and Ornamental Trees, etc.

William Reid, Elizabeth, N. J.—Wholesale Price List for the Fall of 1862, of Fruit Trees, etc.

H. Southwick & Son, Dansville, Livingston Co., N. Y.—Wholesale Catalogue of the Livingston Nurseries, for Autumn of 1862 and Spring of 1863.

Correspondence.

Editor Horticulturist:—Can you or any of your correspondents tell me how to destroy those large caterpillars on the Tomato plants? My tomatoes and those of my friends are infested with caterpillars from two to three inches long. The only way of making an end of them that I know of is to gather them off and kill them. This is a sure way, but the task with me is a long one, as I have a great number of plants, and the caterpillars seem to breed at a *two-forty* rate. I have to go over my plants twice a week with a pair of shears, and every worm I see I just cut him across with the shears. I suppose you will say this is a very good way to kill them; but what I want to know is, if they can not be destroyed

before they do any harm? Can they not be destroyed while in the larva state? My celery plants are infested with a caterpillar something like the one on the tomato plants. If you can tell me how to get rid of them, I shall be much obliged. Yours respectfully, HOMMOCK PARK.

[We certainly do think Hommock Park's method a very sure one; but it is very tedious. Tobacco water and other substances will cause them to drop from the plant, but seldom kills them. A good plan, and one that saves much subsequent trouble, is to destroy the eggs; many are thus killed at a single blow. The ichneumon very often selects these worms to deposit its eggs in, and destroys many in this way. You will often see the backs of these caterpillars covered with small white cocoons. If you put them under a glass, you will soon have a swarm of ichneumon flies. The caterpillar on young celery plants is a greater pest than the other. We do not know of any certain mode of getting rid of them except killing them by hand. Perhaps some of our readers may know a better way.—ED.]

EDITOR OF THE HORTICULTURIST:—In the July number of your Journal, you give a report of the late exhibition of the Brooklyn Horticultural Society, wherein you would apparently give your readers the impression that the Seedling Strawberry which received the premium as the *Best*, was not justly entitled thereto; and further, you seem very desirous to make people believe that Mr. Fuller and Mr. Burgess exhibited Seedlings, which were actually entitled to the prize over mine.

While I admit that both these gentlemen exhibited very fine berries, yet I must say that I think the judges were men of very good taste, and understood the work before them. In your report you suggest that Seedlings should have been exhibited two years and examined on the ground. Now this is just exactly my view of the case, and the latter part of this suggestion I made to several prominent members of the Society on the first day of the exhibition. While these *suggestions* may be your honest convictions, yet I can not see why you should *think*, as you say, that under this rule Mr. Fuller's and Mr. Burgess's Seedlings would have taken the prize over the one that received it, *you* never having seen it in bearing. My bed of "General McClellan" covers a piece of ground 85 yards long and two yards wide, from which I picked, this season, 350 quarts of berries, which is over 300 bushels to an acre. Another very good proof of the real merits of my Seedling is, that although contrary to the rules of the Society, an interested party remained in the room while the judges were examining the fruit, and done his best to defeat me and win the prize himself, but the judges being honest men, believed in giving honor to whom honor is due, and hoping you will be kind enough to do the same, I am respectfully yours,

Newark, N. J. FRANCIS BRILL.

[It was our purpose to have inserted Mr. Brill's letter in our last issue; and we supposed it was in till the number was issued. Mr. Brill is mistaken in sup-

posing we wished to create any false impression whatever; we simply exercised our right of criticism. The point was just as likely to have reached some other person as Mr. Brill; we were not thinking of persons, but of the objects immediately before us. Now we will explain to Mr. Brill why we thought the others might have taken the prize under the conditions we suggested. We tested all these seedlings in the room; some of them we had examined for two or three seasons in the beds, and knew two or three of them to be of large size, good quality, and exceedingly productive, and we accordingly supposed they would stand more than an even chance with a much smaller fruit, even though it should excel a little in quality. The same thought would probably have occurred to Mr. Brill himself under the circumstances. But he should not be too sure that we have not seen his seedling, if, as we suppose, General McClellan is identical with the berry that he has been selling for a couple of years past as Brill's Favorite. We had no thought, in any thing we said, in detracting in the least from the real merits of Mr. Brill's seedling, or in lessening the honor to which he may be entitled in having originated it. We desire at all times to mete out simple and even-handed justice.—Ed.]

The Montgomery Grape.—Mr. Editor,—Agreeably to your request, I send you an account of what I suppose to be the Montgomery Grape, lately brought into notice. In the year 1830, on my return to New York, in June, from the State of Alabama, where I intended to commence a horticultural establishment, in the vicinity of Mobile, and expecting to return early the ensuing fall, not wishing to remain idle through the summer months, Grant Thorburn, who then kept his Seed establishment in Liberty Street, told me that Mr. Montgomery, at Upper Red Hook, in Dutchess County, N. Y., (*now changed to Tivoli,*) wanted a man to put his grounds in order: I went and saw Mr. Montgomery, and at once made an engagement. I found the location a very pleasant one, the house and grounds being on one of the knolls standing back from the river about half a mile. The ground was susceptible of being made one of the finest places on the Hudson, having a beautiful brook, with several water-falls, running through the grounds. The soil, with the exception of the knoll where the Grapes were planted, was a very tenacious, stiff clay. Where the Grapes were planted was a loose formation of rotten stone and loose boulders. To this formation I attributed the success of the Grapes. I was familiar with the White Chasselas Grape under out-door cultivation, and was perfectly satisfied it was nothing else. I am under the impression that Mr. Montgomery told me that he brought the Grapes from Philadelphia, where he formerly resided, but this I am not certain of. Being satisfied that they were White Chasselas, the history given by Mr. Montgomery at the time left no impression on my memory. The dressing of these vines being the first work I did, I remember them very distinctly; and since then, I have remarked to several people the success with which they were cultivated, ripening perfectly, and being free from mildew.

How long they continued to flourish and ripen their fruit after I left, I am unable to say, having lost track of the family long since, and never having had an opportunity of visiting the grounds. I am under the impression that Mr. Montgomery has been dead a number of years; and he was probably the only person who could have given an account of this Grape. He had a large family of sons, who are no doubt living or settled somewhere in the neighborhood of New York or Philadelphia; but being young at that time, they would not likely be able to give any account of where they originated or came from. WILLIAM REID.

[At a meeting of the Brooklyn Horticultural Society held last fall, we stated that the history of the Montgomery grape, so called, could be traced back some thirty years or more. We also stated that Mr. Reid, of Elizabeth, saw the grape at Mr. Montgomery's as long ago as 1830, at which time it was believed to be the Chasselas. Some of our Poughkeepsie friends having suggested that we might have misunderstood Mr. Reid, we requested him to send us a written statement of what he knew of this grape, and we now give it to the reader. It agrees with statements that we have heretofore received.—ED.]

POUGHKEEPSIE HORTICULTURAL CLUB.—We are very glad to learn that this Club holds monthly conversational meetings, and is doing much good. Horticulture will be more surely advanced by such meetings than by even public exhibitions; and when both are combined a society is in the way of doing its duty, and may confidently look for public support. For the proceedings of the last meeting, held August 6th, we are indebted to Secretary Young.

Messrs. H. and J. Carpenter exhibited ten varieties of Currants. H. L. Young exhibited the New Rochelle and the common field Blackberry. Mr. Williams exhibited Summer Pippin Apples, Mr. Wilcox very large Harvest Apples, and Mr. Gifford the Beurré Giffard Pear.

Mr. Williams thought it very desirable to raise the Black Currant for wine. He believed it had medicinal qualities, and could be made for 50 cents a gallon at the present price of sugar. An acquaintance of his had made a hundred gallons.

Mr. Vincent opened the discussion on Grapes by stating that he had growing on his premises 13 varieties, and that some sorts had mildewed badly, while others had escaped. He spoke of mildew or blasting of the berries, not of the leaves. Even the Concord, supposed to be free from this affection, had suffered badly, so that out of 600 or 800 bunches, but very few perfect ones could be obtained. The kinds mildewed are the To Kalon, Catawba, Diana, and Anna, and they had been affected in degree somewhat according to the order in which they are named, the To Kalon being the most injured. The kinds that have escaped mildew up to the present time are the Hartford Prolific, Northern Muscadine, Elsinburgh, Delaware, Rebecca, Clinton, Union Village, and Isabella. Mr. V. remarked that nearly all his vines had about the same exposure, different kinds were trained on the same trellis, and all had been similarly treated. They were young vines; had been set

about three years; they were heavily manured on first planting. This last fall he had manured with manure gathered from blacksmiths' shops; this had been placed in a trench between the trellises, not directly on the grape vine borders.

Mr. H. D. Myers raised on a side hill, with a southeast exposure, and on a slaty soil, approaching in some places close to the rock, the Diana, Catawba, and Isabella. His vines had been set out about three years; his fruit had not mildewed, except at one end of his trellises, near a board fence. He had applied but little manure last fall; he put not over four quarts of rotted manure to each vine.

Mr. J. Carpenter was not troubled with mildew; he had never been, but this season the berries were cracking open, so that many bunches were injured from this cause. It was so with all kinds of grapes raised by him. He did not manure heavily; he used very little manure, except in the way of bone dust. The Concords, growing on a gravelly hill, had burst, but the Isabellas had suffered still more than this variety.

Mr. H. L. Young said that his grapes, growing on a side hill, with a slaty rock underlaying the soil, had been but little affected by mildew. Among many hundred bunches of Concords, only here and there a mildewed grape was visible; the loss would not be worth mentioning. The Dianas had suffered more, and some bunches were injured. As to the Catawbas, they were nearly all gone, except on occasional favored portions of the vines, small in extent. No other kinds had mildewed to any degree, and he fruited some ten or eleven varieties.

Mr. Uhl found the Catawba, Diana, and Montgomery to mildew badly, the Concord slightly; the Isabella, Union Village, Northern Muscadine, Clinton, and Delaware were perfect. He had found some of the leaves of his vines mildewed. On his high trellises, all the Diana grapes below a line ten feet above the ground were gone; above this there were some good bunches.

Mr. Vincent said, he thought the mildew came from the berries being kept wet by frequent rains, and in the sun striking upon them in this condition. Others stated they thought it came from excessive rains, acting upon a soil too highly manured. No remedy was proposed by any member when inquired for, but it was remarked that sulphur thrown freely on the vines had been used, but apparently without success.

The discussion was engaged in by many others, including Messrs. Merritt, Tallman, Corlies, and Gregory, and was very suggestive to cultivators of the vine, seeking the proper course for its successful treatment.

On motion of J. B. Jewett, the President was authorized to appoint hereafter a committee of three to prepare a Premium List, choose judges, and make other preparatory arrangements in reference to the contemplated exhibition towards the close of September next, said committee to report at the next meeting of the Association.

The subject of raspberries being introduced, Mr. H. D. Myers considered the Antwerp best for market, the Fastollf for family use, and Brincklé's Orange the most suitable for preserving.

Mr. Jewett's opinion was that Brincklé's Orange was rather tender; that is, the plant; he had tried the Franconia, Allen, and Fastollf; the last was best for family use, but it was too soft to bear any transportation. He liked the flavor of the Allen, but could not get from his bushes a sufficient quantity for use; the berries were small and imperfect. Mr. Young found the same fault with the Allen; the great quantity of its suckers was also an objection.

Mr. Carpenter found the Allen fruitful, when planted by the side of the Antwerp, or some other productive variety.

Mr. Buckingham said that he did not like the Perpetual Red, and had left off its cultivation. On inquiry as to the best time to set out a Raspberry bed, Mr. Myers said that the practice in Milton and through the raspberry growing locality was to take up the bushes in the fall, heel them in, and then set them out in a bed in the spring.

Adjourned to the afternoon of the 1st Wednesday in September.

H. S. Young, *Sec'y.*

Brooklyn Horticultural Society.—The last Conversational Meeting was held at the Academy of Music, President Degrauw in the Chair. The evening was mainly occupied with Dr. Trimble's Report on Insects injurious to city trees, from which we make the following extracts, to be followed by others.

In the Report of your Committee on this subject, it is stated, three of these parasite flies had been long known. In these investigations I have found eleven varieties, varying in size from a small wasp to others, such mere specks as to require the aid of a glass to be able to distinguish the characteristics of the Ichneumon class. More or less of these have been found in every part of your city as well as in New York. In a collection of thirty of the worms in the pupa state taken from one tree, fifteen had been destroyed by these enemies, and in these fifteen, there were five varieties of these parasites. But from no other tree or section of either city have I found the proportion of these enemies, or friends rather, so great.

At the last meeting I spoke of one tree near your public buildings as having been a subject of special attention; that the number of worms on that tree in the beginning of the season was unusually great; that two weeks later not one could be found upon it, and that the ground was almost covered with the dead bodies of half-grown caterpillars.

The chairman of your committee had observed the same thing, and supposed that the leaves of the tree (a variety of the Elm) were poisonous to the worms. This was a very natural inference; but if poisonous this year, why not other years? And why should the parent moth have chosen a poisonous tree to deposit her eggs upon?

In the world of wonders in which we live, there is nothing more wonderful than the instinct of insects; *it is almost never at fault.* You may find small collections of eggs upon the Ailantus and some other kinds of trees that these worms do not

prefer to feed upon, but it must be remembered that the laying of the eggs with insects is usually the last act of life, and that often they become almost too feeble to fly; in this condition they may be sometimes carried by the wind, during storms, to other trees that would not be their choice. But it would be hard to find an instance where a parent butterfly has left her progeny to the contingencies of poisonous food. My investigations were commenced too late to ascertain positively that these young worms had been stung by parasite flies; but I suppose they were, from the circumstance that I have in many instances found the larva of insects in the bodies of these caterpillars; that they differ from the eleven specimens found in the pupæ in this important particular, that when full grown, they leave the bodies of these dead caterpillars, and pass into the ground, and to all appearance thus far will not undergo their transformation into flies till next season. Now, if this theory should prove correct, and these flies multiply at the rate such insects usually do, another year they may cause a greatly increased number of your young worms to come to the ground prematurely; and if you should offer a bounty on worms, this very kind would be likely to be brought in; and should they then be so disposed of as to destroy also the embryo parasites within them, you would find yourself about in the predicament of the man who killed the goose that laid the golden eggs. * * * *

It may be asked, what has all this talk about Parasite or Ichneumon flies to do with the great question in Brooklyn, "What shall be done with the worms?"

At one time, many years ago, the whole civilized world was asking, "What shall be done with the Hessian fly?" And thus went on for a series of years, until wheat was likely to come up to starvation prices. But during all this time a little Ichneumon fly was mustering its forces, increasing them rapidly every year, until at length in *overwhelming force* it pounced upon this destroyer, and that question has been settled ever since.

I have lately seen a statement from a western agricultural paper, of four different parasites found for the caterpillar called the Army worm. That strange insect appears occasionally as the plagues did in Bible times. In the prophet Joel there are several allusions to these insect visitations. Of one of them it is said, "The land is as the garden of Eden before them, and behind them a desolate wilderness; yea, *and nothing shall escape.*"

So with this army worm. When a universal destruction seems impending, and men begin to realize how helpless they are to avert it, the laws by which *God* has decreed that the insects, as well as every other portion of *his* creation, shall be governed and controlled, are found to be enforced, and in good time.

This parasite or Ichneumon class of flies is one of *his* instrumentalities. * * *

The Ichneumon.—The Ichneumon animal eats the eggs of the crocodile, to some extent controlling its numbers.

The cuckoo in England and the cow bunting in this country, lay their eggs in the nests of other birds, and the young are nurtured by foster mothers; and it is

said these parasite intruders have the instinct to throw the rightful possessors out of their nests. By such a process these foster parents would be lessened the next year—a law that would react upon the parasites in the future; and we see that none of these birds become numerous. The ichneumon insect is a four-winged fly, and an immensely numerous class, of all sizes and exceedingly irregular and eccentric in shape. *They are the great regulators of insect life.*

The female deposits her eggs in, and the young feed upon, the living bodies of other insects.

It is the fatal enemy of many other insects; flies in their larva state, and even the eggs of some insects, are destroyed by them, but the caterpillars are the great sufferers. You may often see feeble looking ones, studded over the back with little protuberances; these are the cocoons of the parasite grubs that have fed to maturity upon the flesh of the poor worm, and leaving just vitality enough to last as long as it is necessary for them that they should live. These little creatures, when full grown, issue from the substance of the poor caterpillar, spin their cocoons and attach them by silken cords to their miserable victims. (Here the Doctor showed a specimen with eighty cocoons attached, and from which he had collected the flies.)

Many insects prey upon each other; sometimes diseases diminish them; birds destroy incredible numbers; toads eat them; frogs and fish consume vast numbers of the larva of the submarine varieties; but such is the incredible rate of increase, that many kinds would overrun us, but for the wonderful check of this parasite class. The newspapers often report fearful numbers of some new insect, and forebode dreadful consequences. Such insects are troublesome for a short time and then disappear. Some observe a periodicity, as the Locust, the Chaffers, and Ephemeræ, but most of them are checked by the Ichneumon.

I have seen the stems of grapes cut off in great numbers by a caterpillar, and I attempted to see what butterfly it would come to, but I only got large, fierce looking Ichneumon flies, two from each.

Our pine forests are saved from serious injury, and the lumber from damage, by the friendly interference of an Ichneumon insect that stings the borer, while just under the bark, during the period of its transformation.

I once knew an eccentric person make a calculation, that the undisturbed increase of a single herring would, in twenty years, more than equal the solid earth, and he became nervous with the idea that we were all to become herrings. He forgot that in addition to the hundreds of enemies that prey upon these fish, besides ourselves, that the cachelot whale feeds upon them, and takes in 2,000 at a single mouthful. No. *Nothing here is allowed to take exclusive possession.* Of the hundreds of thousands of varieties of insects, none become extinct, and none are permitted to preponderate to a dangerous degree for any length of time.

When meteors and comets jostle the planets out of their places, and the heavenly system becomes disturbed, it will be time enough to anticipate that God has forgotten to regulate the insect world.

The Birds.—I once noticed a proposition to stock your city with Birds, in order to rid you of the worms. Some one, I think, recommended a large importation of sparrows. Few people have either the inclination or time to study insects, but such ignorance of birds is amazing. If you had thousands of Canary birds upon your trees during the season of the worms, and they could get no other food, they would soon die; and the sparrows are of the same class, their beaks are short, sharp and strong, formed for cutting off the husks of seeds, and seeds are their chief food. To be sure, they will feed their young on softer food, and will take some insects; but the sparrows would never conquer your span-worms.

Much the largest portion of all the birds are insectiverous; nearly all the singing birds of summer; and they attend to the caterpillar business for us in the country; but there are difficulties in the way of having their services in a city like this. Brooklyn has grown faster than the trees. Had you some large old parks, with lofty elms or willows, the Baltimore Oriole would be a common bird; she does not object to city life, provided she has the proper trees. It is one of our most common birds in Newark, N. J. This season I noticed they were plenty in the Washington Parade Ground in New York; there, also, I noticed several kinds of the thirty or forty varieties of little warblers, and these are among the best of the insectiverous birds. Had you large gardens with thick hedge-rows, and not too many cats, you would have the cat-bird, possibly the thrush might come. Had you old apple orchards with hollow limbs, the blue-birds would be here, and all these would enjoy your worms hugely.

Your city might swarm with pigeons, but they would not touch your insects; they do not even feed their young upon them, as quails and poultry do. All the varieties of swallows, including the martins, (and some of these can be domesticated,) are fly-catchers, and might prove more injurious than useful. The king-bird, pewit, snap up immense numbers of flies, and some bugs and bees in the day-time; but the butterfly of your span-worm is a moth, and is on the wing almost exclusively at night. The night fly-catchers, as the whip-poor-will and night-hawks, have their peculiar habits, and seldom pursue their food in cities.

The wren you can have. It is easily domesticated, and increases rapidly; but except while the span-worm is still small, or during the few days that the moths are in existence, it can not accomplish much; its capacity is too small, and I suspect its taste is too delicate for food so gross.

But still I would advise you to put up wren-houses all over the city; independent of its usefulness, it is an amusing little pet. I have watched one this season with unusual interest. When it first came on, it found its house occupied by a pair of blue-birds; but it is a pugnacious little fellow, and soon turned them out; then their nest was carried out also. In a few days the pair entered upon the great work of building their nest, and it is astonishing what a number of little sticks they will carry in before it is finished. Give your wrens good sized houses, and let the doorway be a good large augur-hole, as they are sometimes much annoyed by the

labor of turning and twisting the sticks to get them in endways. I had a quantity of brushwood carried into the garden early in the spring, to stick peas with; and you should have seen how the wrens were delighted with it; there they chattered and worked at the twigs for many days.

At first they were annoyed by the cats, but they soon found they were perfectly safe in that brush-heap. Sometimes I have seen a cat make a spring, but it was always unsuccessful; the little bird would hop aside, and as if to express contempt, would cock its little tail up straighter than usual, reminding you of Washington Irving's little dog, so proud that he twisted his tail so tight that he could not keep his hind feet upon the ground.

The subject of the protection and uses of birds is attracting much attention.

As one of the links in the chain of animated nature, we should be careful how we interfere; by destroying birds that *seem* to be destructive to our crops, we might break the harmony of that chain, and thus give a preponderance to worse enemies.

But it is with birds, as with ourselves and all the rest of animated creation. Life is a question of food. Suppose you had birds enough to destroy, or even hold in check, this worm pest; as a food, it would only last through the month of June and a few days in July, and then where would this great army of birds, now increased by their broods having come to maturity, be fed during the remainder of the summer. Remember they are insectiverous, and could not be subsisted upon grain.

Birds can only be used as an adjunct, and to a limited extent, in this warfare.

FRUIT GROWER'S SOCIETY OF WESTERN YORK.

(*Concluded from page* 292.)

THE WHITE GRUB.

Question.—The White Grub? What are its habits? What are the most effectual means for its destruction?

L. B. Langworthy.—The white grub is the larva of the May-bug. It is four years in completing its growth—is most destructive in its third year. He thinks it impossible to destroy it, except to dig it up and kill it. It is particularly destructive to strawberries.

Geo. Ellwanger had *always* found white grubs to be plenty in grounds manured by night soil—would never use it until composted three or four years.

E. W. Herendeen had tried clear salt to kill the grubs, without success.

SALT FOR QUINCE STOCKS.

Question.—Has the use of Salt been found to be beneficial to Quince stocks, or to Plum trees?

Geo. Ellwanger had applied salt to pear and plum trees, and found it produced a wonderful effect; would apply six or eight barrels to the acre—would use as

much as a peck for a large tree, as large as a large apple tree. Uses it in February. Puts enough on to make the ground white.

C. Downing thought salt good for all vegetation, but it would do no good to kill insects.

W. P. Townsend had used salt for many years with the best results, for quince trees.

Dr. Sylvester said there was a limit to the use of salt—it must not be used in excessive quantities.

NEW STRAWBERRIES.

Question.—What new varieties of the strawberry have been found to promise well in the experience of this Society?

Dr. Sylvester thought Frost's Fillmore a valuable new sort. He thought the crop a full average of other sorts. Cutter's Seedling he considered a valuable sort also. In Boston it was highly prized. The Austin Seedling too soft for carrying well.

THE EXHIBITION OF FRUITS.

The Committee on Fruit made the following report:

Cherries—One collection, two varieties, viz.: May Duke and Gov. Wood, from E. Ware Sylvester, Lyons.

Strawberries—Collection, 15 varieties, comprising among others Triomphe de Gand, Hovey, Fillmore, Austin Seedling, Jenny Lind, Peabody, Downer's Prolific, and Cutter's Seedling, from E. Ware Sylvester, Lyons.

A new seedling, of very dark color, rich flavor, and good size, promising well, from J. A. Pain, Clyde.

Collection of six varieties, comprising Wilson, Triomphe de Gand, Trollope's Victoria, and others, from Wm. Webster, of Rochester.

A new pistillate seedling, called Russell's Great Prolific, originated by H. Russell, of Seneca Falls, in 1856, very large, 4⅜ inches in circumference, color bright red, flavor very good, flesh rather firm, juicy, and rich; appears to be very productive, and promises to be valuable. Exhibited by Geo. Clapp, of Auburn.

Three baskets containing very fine samples of Triomphe de Gand, Wilson, and Hooker, and one basket Early Purple Guigne Cherry, from Joseph Harris, Rochester.

Mr. Moore, of Rochester, exhibited a seedling strawberry, which in size, form, and flavor, is something like the Triomphe de Gand.

The following named gentlemen were appointed as delegates from the Society, to attend the meeting of the American Pomological Society, to be held in Boston, Mass., on the 17th and 18th of September next: Joseph Frost, of Rochester; W. P. Townsend, of Lockport; E. W. Sylvester, of Lyons; S. N. Hollins, of Syracuse; T. C. Maxwell, of Geneva; E. Moody, Lockport.

The following delegates were appointed to attend the meeting of the New York State Agricultural Society, to be held on the 30th of September next: E. Moody, of Lockport; H. L. Langworthy, of Rochester; S. B. Gavitt, of Lyons.

The Society then adjourned to meet at Rochester on the first day of the State Fair of the New York Agricultural Society.

JALOUSIE DE FONTENAY VENDÉE.

For the Horticulturist.